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International Specialists in the Environment

Site:	Linwood Mining
ID #:	180980352297
Break:	L7
Other:	12-8-89

MEMORANDUM

TO: Pete Culver, RPO
THRU: Philip Dula, Assistant Manager
FROM: E & E/FIT
DATE: December 8, 1989

RECEIVED
DEC 11 1989
PREP SECTION

SUBJECT: Data Summary for the Screening Site Inspection of the Linwood Mining and Minerals Site (formerly Umthun Trucking), Buffalo, Iowa.

TDD# F-07-8809-008

PAN# FIA0236SA

Site# V86

Project# 001

Superfund Contact: Pete Culver

Fit Project Leader: Wesley McCall

30815356



Superfund

INTRODUCTION

The Ecology and Environment, Inc., Field Investigation Team (E & E/FIT) was tasked by the Region VII U.S. Environmental Protection Agency (EPA) to conduct a Screening Site Inspection (SSI) of the Linwood Mining and Minerals Site (formerly Umthun Trucking). The site is located in Buffalo, Iowa, approximately five miles southeast of Davenport (Figure 1).

The purpose of this SSI was to determine whether ground water or surface water is being contaminated by heavy metals from fly ash deposited on site. Fly ash from coal-fired lime kilns has been dumped on the ground surface over approximately three acres, and has been vented/precipitated into several acres of the abandoned underground mine works. The FIT collected ground water samples from existing wells, and surface water, sediment, soil, and fly ash to characterize site conditions.

SITE BACKGROUND

Umthun Trucking installed a private well in 1983 at their Buffalo terminal. Complaints by employees at the terminal concerning the well water were initially investigated by the County health department and later by State officials. Samples collected from the Umthun well at this time displayed elevated concentrations of some heavy metals and a low pH. Further work by State and local officials revealed that the Umthun well was cased through the abandoned mine works of the Linwood Quarry which was used for venting flue gases and particulates from the lime kilns. The well was re-cased and grouted and no further problems have occurred.

The Linwood Quarry began operation as an open limestone pit mine. The site was purchased by the McCarthy Improvement Company in 1940 and

in 1956 began subsurface mining as removal of the overburden became uneconomical. Initially, subsurface ~~mining~~ was done in the Devonian-age Davenport Formation. The underground works on the upper level have a 25-foot ceiling with 30-foot diameter pillars on 70-foot centers. Approximately 500 acres have been mined on this level. The Scott County landfill occupies approximately 100 acres overlying the northern portion of the underground works.

More recently, quarrying has begun on a second, lower level in the mine. Limestone is being taken from the Otis Formation, also of Devonian Age. Approximately 60 acres have been mined from the Otis Formation.

Three coal-fired lime kilns are maintained and operated on site by Linwood Quarry. The kilns are situated on the south side of Highway 22 near the office building (Figure 2). Until 1974 the kiln fly ash was vented to the atmosphere. At that time 160 acres of the upper level in the mine was walled off and a seven-foot diameter duct was emplaced from the kilns to this inactive area. Precipitating units at the kilns remove the >5 micron diameter particulates from the kiln fly ash. The finer particulate fly ash is routed to the sealed-off underground works via the ductwork and blowers. The fly ash vents into the large mine cavity underground where the fly ash is precipitated on the floors and wall of the cavity. Buildup pressure in the cavity is released to the atmosphere through a nine-foot diameter vent located approximately 2,000 feet northwest of the Umthun terminal.

Gaillard Krewer, Director of Mine Operations, informed the FIT that effluent from the vent is occasionally monitored for opacity by state regulators. Krewer also indicated that the State of Iowa was setting up a sulfur dioxide monitoring station northeast of the vent at the corner of the Wilson Trucking property.

A review of the cultural, climatic, and geologic conditions at this site was presented in the Work Plan for this project (E & E 1989). Refer to this report for further information and detail.

FIELD ACTIVITIES

Field activities were conducted the week of May 22, 1989, by FIT members Wes McCall, team leader; Gayle Hubert, site safety officer; and Rob Parsons and Debbie Fischer, environmental technicians. Site access was granted by Gaillard Krewer.

Soil, Ash, and Sediment Sampling

Fly ash samples were collected to determine the concentration of heavy metals present on site. Soil and sediment samples were collected to characterize background conditions and determine if any local contamination of these matrices has occurred. Each sample consisted of five aliquots taken from 0 to 6 inches with stainless steel spoons and homogenized in aluminum tins.

Table 1 summarizes the samples collected, and sample locations are depicted on Figure 2. The sample series for this activity was DC943.

Four samples and a duplicate (031 through 034D) were collected from the ash piles northeast of the Umthun Trucking terminal. According to Krewer, this ash was emplaced from 1975 to 1976. Samples were collected of the ash currently being produced at the bag house and blowers (040 and 041) at the lime plant. These two samples were collected from kiln ash that was spilled on the ground.

Sediment samples were collected from Moore and Donaldson creeks which transect the site in a general north-south trend and empty into the Mississippi River. Samples were collected from Moore Creek upstream of the ash piles (036) and from just below these piles (038). Donaldson Creek crosses the Scott County Landfill before flowing past the Linwood Quarry. Samples were collected from three locations on Donaldson Creek: north of the landfill (043); between the landfill and the quarry (039); and below the quarry near the confluence of the creek and the Mississippi River (042). Sediments were collected after corresponding surface water sampling was completed. A downgradient soil sample was taken at the Umthun Trucking terminal (037) about 50 feet north of the well head. Two background soil samples were collected: one at the Moses residence (044); and one from just north of the surface kiln ash (035).

Water Sampling

Twenty water samples were collected. Ground water samples were collected from industrial, municipal, and residential wells; surface water samples were collected from corresponding sediment sample locations; and samples of mine water were collected from Linwood Mining operations. The surface water samples were collected at the same locations as sediment samples, before sediments were disturbed. Wells were purged for three to five minutes before samples were collected. Sample locations are summarized in Table 2 and sample locations are illustrated on Figures 1 and 2.

In an effort to characterize the mine effluents, three mine water samples, plus one duplicate, were collected. Sample 016 was collected from the discharge pond which occupies the bottom of the abandoned quarry pit, and is used to rinse the stone and reduce dust at the mine. Mine waters seeping and flowing in the mine were collected at the lower level in the mine at one location and pumped to a surface holding pond. The collection point is 186 feet below the surface. Sample 017 and its duplicate, 017D, were collected from the six-inch conduit at the surface pond. A third sample of the mine water was collected from the floor of the second level of the mine. This sample (015) was taken below a portion of the abandoned mine works that was sealed off to receive kiln effluents and ash particulates. The roof and walls displayed little evidence of seepage.

Ten wells were sampled during this SSI. Alvin Lee, Assistant Manager of the Linwood Limeplant, escorted the field crew to the wells at the Linwood office (014), quarry bathhouse (013), and lime plant (012). The Umthun Trucking well (003) was resampled. This well had elevated concentrations of heavy metals and low pH (2.7) when previously sampled by the Iowa Department of Natural Resources (IDNR). The well has been re-cased and grouted since the IDNR sampling.

The supply well for the Scott County landfill (005), which overlies a portion of the mine, was sampled. ~~The well~~ is 325 feet deep and has a static water level of 170 feet. Buffalo City well #2 was in operation and a sample (019) was collected. The sample was chlorinated, as there was no access valve before the chlorination system. The total depth of the well is 405 feet, with the pump at 145 feet. According to Ralph Jewett, Water Commissioner, the water quality from well #2 has deteriorated within the past year. The water contained a high concentration of dissolved solids and had a sulfur odor.

Samples from wells at the (b) (9) (008) and (b) (9) (018) residences were collected to serve as background. Samples were also collected from two residential wells adjacent to the site: (b) (9) (009) and (b) (9) (010). The (b) (9) complained of poor water quality, including hardness and sulfur odor.

ANALYTICAL RESULTS

Surface Water

One sample on Moore Creek was collected upgradient of the ash piles (001) and a second sample (004) was collected downgradient of the ash piles. The upgradient sample was found to contain 12 µg/l chromium while both samples had 50 µg/l or less barium. Samples 006, 007, and 011, which were collected from Donaldson Creek, display increasing levels of chromium; concentrations were below the detection limit at the background location and increased to 28 µg/l at the confluence with the Mississippi River. All of these concentrations are well below the MCLs established by the EPA (Table 3).

The anion tests for chloride and sulfate did not reveal a distinct trend of increasing levels from upgradient to downgradient samples. Chloride concentrations did not exceed 100 mg/l in any of the stream samples, while sulfate levels were above 250 mg/l in most of these samples (Table 3). None of the stream water sampled is used for potable water.

Ground Water

Three of the ten wells sampled (012, 013, 014) were located on site. Two of the well samples contained copper (12 and 18 µg/l) and the sample from the well at the quarry office contained 8.6 µg/l lead. The quarry office well is not used for drinking water.

The well sample from the (b) (9) residence (010) which is located at the southeast corner of the quarry contained 9 µg/l chromium, 20 µg/l copper and had a conductivity of 1,300 µmohs. Approximately one mile northwest of the quarry, a background well sample was collected at the Moses residence (018). This sample contained 11 µg/l copper, undetected levels of chromium, and had a conductivity of 640 µmohs. The Umthun Trucking terminal well sample (003) was found to contain 28 µg/l chromium and 13 µg/l copper, and had a conductivity of 500 µmohs and a pH of 7.6. Previous problems with this well, which is cased through the abandoned portion of the Linwood Quarry used to vent the flue gases from the kilns, initiated the investigative work at this site.

The sulfate and chloride anion analyses of the well samples found only one well sample that exceeded the ~~Secondary~~ Maximum Contaminant Level (SMCL) for sulfate. The city of Buffalo well #2 contained 268 mg/l sulfate. None of the other wells had sulfate levels over 200 mg/l or chloride levels over 100 mg/l (Table 3).

Mine Waters

Sample 016, collected from the discharge pond, had concentrations of copper at 10 µg/l and chromium at 16 µg/l; this sample had the highest chloride (112 mg/l) and second highest sulfate (374 mg/l) level of all the water samples. Sample 016 had a pH of 9.8 which is distinctly higher than any of the other water samples, and a conductivity of 1,000 µmohs.

The remaining mine water samples have levels of metals and anions comparable to the background surface water and ground water values.

Soil, Sediment, and Ash Samples

To better characterize the soil, sediment, and ash compositions of the samples collected during this project an average soil composition was tabulated for the elements of concern. This average soil was tabulated based on analyses of uncultivated B-horizon soils within the United States (Connor and Shacklette 1975). The mean values are listed at the top of Table 4.

Anion tests for sulfide were performed on the ash, sediment, and soil samples. Sulfur concentrations were not reported for the average soil. Background values ranging from 10.6 mg/kg to 21.2 mg/kg were reported for the soils and sediments collected for this project (Table 4). No consistent trend of increasing concentrations for downgradient samples was evident, and only one of the ash samples (031 at 53 mg/kg) had a sulfide concentration which exceeded background levels.

All of the arsenic, barium, chromium, and lead, and all but one of the copper concentrations (038) are less than average levels for soil. Conversely, all of the silver concentrations, all but one of the selenium values, and all of the cadmium values reported are slightly greater than the average soil concentrations for an uncultivated B-horizon soil.

Three sediment samples were collected along Donaldson Creek: a background sample (043) above the Scott County landfill; one sample between the landfill and quarry (039); and a third sample (042) from downgradient of the quarry at its confluence with the Mississippi River. No trend of increased downgradient concentration was observed for any of the elements of concern. The concentrations are below the average soil levels (Table 4).

Moore Creek flows in a southerly direction past the ash piles and into the Mississippi River. A sample was collected upgradient (036) and downgradient (038) of the ash piles. The metals and sulfide levels display a distinct trend of increased concentration from the upgradient to the downgradient sample. The concentrations of lead, selenium, and silver in the downgradient sample are more than 1,000% above average

soil levels, and more than 300% higher than the concentrations observed in the background samples from Donaldson and Moore creeks (Table 4).

The Extraction Procedure Toxicity test (EP Tox) (CFR40 Part 261.24) was performed on the soil, sediment, and ash samples (Table 5). The elements of concern were detected at levels well below those established by the EPA as action levels. Thallium was detected in some of the samples in the lower parts per billion range. No EP Tox level has been established for thallium.

SUMMARY AND CONCLUSIONS

Work at the Linwood Quarry (formerly Umthun Trucking) site was initiated by complaints from workers at the terminal concerning the well water. Initial analyses by the county and state disclosed levels of chromium, copper, lead, zinc, and vanadium in the parts per million ranges and a pH of 2.7. Further work by state and local agencies revealed that the Umthun well penetrated through the mine works of the Linwood Quarry which had been closed off for use as a venting/pre-precipitating system for the flue gases from the lime kilns. The acidic nature of the flue gases may have caused corrosion of the well casing, resulting in elevated metals levels and the low pH of the well water. The Umthun well has since been re-cased and grouted.

Analyses of the Umthun well sample collected by the FIT for this project found 28 µg/l chromium, 13 µg/l copper, 89 µg/l barium, and 1 mg/l chloride and 22 mg/l sulfate. All of these concentrations are below the MCLs and SMCLs established by the EPA. Field measurements recorded a pH of 7.6 and 500 µmhos for conductivity.

Water samples from streams, wells, and mine waters were collected to characterize current site conditions. The total metals and anion analyses of the surface water samples revealed only one element of concern: chromium levels on Donaldson Creek displayed a clear trend of increasing concentration from the upgradient background sample to the downgradient sample. However, detected concentrations were below the recommended MCLs.

Using the (b) (9) well (018) as background, the levels of chloride, sulfate, and conductivity are elevated in the (b) (9) well (010) and in at least two of the on-site wells (013 and 014). The (b) (9) well is located at the southeast corner of the Linwood Quarry. The upgradient Scott County landfill may also have some effect on this location.

Compared to the background surface and well water samples, one mine water sample (016) displayed elevated chloride, sulfate, and conductivity levels. This sample, collected from the discharge pond that occupies the abandoned surface quarry, also had a pH of 9.8 which is anomalously high. The water in the discharge pond is used to wash down the aggregate from the mine to reduce dust problems.

Compared to average soils and background soils, the kiln ash samples collected for this project had elevated concentrations of

silver, selenium, and cadmium. One ash sample also displayed an elevated sulfide concentration.

The results of the soil and sediment analyses reveal that the sediment collected downstream from the ash piles has elevated concentrations of silver, selenium, lead, and cadmium. These elevated levels appear to be the result of mechanical transport of ash particulates downstream and not related to solution/precipitation processes of the metals. This is inferred because the surface water analysis at this location displayed relatively low metals concentrations.

The amount of sulfur dioxide and nitrogen oxides that are being vented from the kilns into the abandoned mine area at the Linwood Quarry may also be significant. Analyses provided by Linwood Quarry state that 329 lbs/hour of sulfur dioxide and 123 lbs/hour of nitrogen oxides are vented into the abandoned mine works (Table 5). The effect of the influx of these very reactive oxides on the limestone of the Davenport Formation, which is a part of the regionally important Devonian aquifer, is not fully known at this time.

The FIT could not collect samples in the abandoned mine area because the kilns and blowers were in operation. Gaillard Krewer informed the FIT that the kilns were scheduled to be down for maintenance at a later date. Krewer indicated that the Iowa Department of Natural Resources (IDNR) was regularly monitoring the emissions from the mine vent for opacity. He also pointed out the new air monitoring station being emplaced by IDNR just northeast of the mine vent. Later discussions indicated that Krewer was in contact with IDNR concerning permits for the use of the discharge pond water and the return of dust-laden effluents to this receptor (Krewer 1989b). He also indicated at this time that no state or federal agency had collected samples from the mine vent area to document existing conditions.

The Linwood Quarry site in Buffalo, Iowa, is a relatively complex project with several possibly interacting processes occurring. Factors potentially influencing the ground water at this site include the influx of flue gases into the abandoned mine works; possible percolation of high pH water from the discharge pond into the aquifer, as well as leachate from the Scott County landfill which overlies a portion of the Linwood Quarry. Components which may be affecting air quality would include the flue gases venting from the abandoned mine works into the atmosphere, and the possibility of airborne particulates from the surface dumped ash. There is also a coal-fired electric generating plant located adjacent to the quarry.

Attachments: Bibliography
Figure 1: Site Location Map
Figure 2: Sample Location Map
Table 1: Ash, Sediment, and Soil Sample Summary
Table 2: Mine, Surface, and Well Water Sample Summary
Table 3: Water Sample Analytical Summary
Table 4: Soil, Sediment, and Ash Analytical Summary

Table 5: Analysis of Lime Kiln Flue Gases
~~Chain-of-Custody and Field Sheets~~
EPA Data Transmittals
EPA Site Investigation Form 2070-13
Technical Directive Document (TDD)

BIBLIOGRAPHY

- Connor, Jon J., and Shacklette, Hansford T., 1975, Background Geochemistry of Some Rocks, Soils, Plants, and Vegetables in the Conterminous United States, Geological Survey Professional Paper 574-F, U.S. Government Printing Office, Washington, D.C.
- Ecology and Environment, Inc., 1989, Work Plan for the Screening Site Inspection of Umthun Trucking, TDD# F-07-8809-008.
- U.S. Environmental Protection Agency, EPA Regulatory Status for Chemicals in Drinking Water, Washington, D.C., March, 1988, Draft.
- Iowa Geological Survey, 1984, Miscellaneous Map Series 10: Silurian Devonian Aquifer of Iowa, Iowa City, Iowa.
- Krewer, Gaillard, May 23, 1989a, Director of Mine Operations, Linwood Quarry, Buffalo, Iowa, on-site interview with Wes McCall, E & E/FIT.
- Krewer, Gaillard, November 14, 1989b, Director of Mine Operations, Linwood Quarry, Buffalo, Iowa, telephone interview with Wes McCall, E & E/FIT.
- U.S. Geological Survey, 1970, 7.5 Minute Series Topographic Map, Andalusia, Iowa, Quadrangle.

Table 1
 Ash, Sediment, and Soil Sample Summary
 Linwood Quarry (formerly Umthun Trucking)
 Buffalo, Iowa
 E & E/FIT, May, 1989
 Sample Series DC943

Sample	Description	Location
031	Kiln Ash	~50 ft. S of quarry vent, N of Umthun
032	Kiln Ash	~150 ft. SE of quarry vent
033	Kiln Ash	E side of hilltop, South of quarry vent
034	Kiln Ash	~100 ft. down hillside (SE) of sample 033
034D	Kiln Ash	Duplicate of 034
035	Bkg. Soil	Hilltop 250 feet north of quarry vent
036	Bkg. Sediment	Moore Creek, NNE of ash piles, upstream
037	Soil	50 feet N of Umthun well
038	Sediment	Moore Creek downgradient Umthun terminal
039	Sediment	Donaldson Creek between Landfill and Linwood Quarry
040	Kiln Ash	Linwood Quarry Limeplant South blower at kilns
041	Kiln Ash	Limeplant, cooling rollers overflow
042	Sediment	Confluence of Donaldson Creek and Mississippi River
043	Bkg. Sediment	North of landfill on Donaldson Creek
044	Soil	Moses Residence

Note: All samples consisted of 5 aliquots collected from 0 to 6 inches. See Figure 2 for sample locations.

Table 2
 Mine, Surface, and Well-Water Sample Summary
 Linwood Quarry (formerly Umthun Trucking)
 Buffalo, Iowa
 E & E/FIT, May 1989
 Sample Series DC943

Sample #	Description	Location	Temp °C	pH	Conductivity µmohs
001	Surface Water	Background on Moore Creek, NE of Quarry vent	NR	NR	NR
002F		Field Blank			
003	Well Water	Umthun terminal	25°	7.63	500
004	Surface Water	Moore Creek downstream from ash piles	NR	NR	NR
005	Well Water	Scott County Landfill	13°	7.67	500
006	Surface Water	Donaldson Creek between landfill and quarry	NR	NR	NR
007	Surface Water	Donaldson Creek North (upstream) of landfill	NR	NR	NR
008	Well Water	(b) (9)	(b) (9)		
009	Well Water	(b) (9)	(b) (9)		
010	Well Water	(b) (9)	(b) (9)	(b) (9)	(b) (9)
011	Surface Water	Confluence of Donaldson Creek with Mississippi River	17°	6.5	700
012	Well Water	Well head at Linwood Limeplant	16°	6.7	500
013	Well Water	Bathhouse at Linwood Quarry N. of Hwy 22	16°	7.3	900

Table 2 (Continued)

Sample #	Description	Location	Temp °C	pH	Conductivity µmohs
014	Ground Water	Linwood Quarry office before filter system	17°	7.1	800
015	Mine Water	Linwood Mine, 2nd level, under mine vent area	19°*	6.65	600
016	Mine Water	Discharge pond in abandoned quarry works	22°*	9.8	1000
017	Mine Water	Pumped discharge from well head outlet pipe at surface evap. pond	12.5°	6.6	640
017D	same as 017	same as 017	12.5°	6.74	640
018	Ground Water	(b) (9)	(b) (9)	(b) (9)	(b) (9)
019	Ground Water (chlorinated)	City of Buffalo Well #2	14.5°	6.20	900

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NR - Not recorded

*Measurement recorded 30 minutes after sample was collected.

Note: See Figures 1 and 2 for sample locations.

Table 3
 Water Sample Analytical Summary
 Linwood Quarry (formerly Umthun Trucking)
 Buffalo, Iowa
 E & E/FIT, May 1989
 Sample Series DC943

Sample #	Ba	Cr	Cu	Pb	Chloride	Sulfate
MCL	1000	50	1000	10	250* mg/l	250*mg/l
SURFACE WATER (Moore Creek)						
001	33J	12	<25	<5.0	40	394
004	50J	<10	<25	<5.0	40	334
(Donaldson Creek)						
007	63J	<10	<25	<5.0	66.2	155
006	74J	9J	<25	<5.0	64.8	258
011	54J	28	<25	<5.0	55.6	258
GROUND WATER (wells) residential						
018	48J	<10	11	<5.0	1.3	12
008	98J	<10	<25	<5.0	2.1	37.3
009	100J	<10	<25	<5.0	11.3	37.9
010	62J	9J	20J	<5.0	190	180
off site						
019	120J	<10	<25	<5.0	27	268
005	110J	<10	<25	<5.0	0.55	20.2
003	89J	28	13J	<5.0	1.01	21.8
on site						
012	61J	<10	<25	<5.0	14	50
013	24J	<10	18J	<5.0	84	181
014	43J	<10	12J	8.6	61.6	135
MINE WATERS						
015	40J	<10	<25	<5.0	24.4	142
016	34J	16	10J	<5.0	112	374
017	79J	<10	<25	<5.0	7	69
017D	81J	16	<25	<5.0	7.2	68
FIELD BLANK						
002	U	<10	<25	0.4	----	---

MCL = Maximum contaminant levels established by the EPA in 1988; concentrations are µg/l.

*Secondary MCLs for drinking water.

NOTE: Only detected levels are reported; see data transmittal for complete analytical results. All concentrations are reported in micrograms per liter (µg/l). See Figures 1 and 2 for sample locations.

J - The associated numeric value is an estimated quantity (see data transmittal).

Table 4
Soil, Sediment, and Ash Analytical Summary
Linwood Quarry (formerly Umthun Trucking)
Buffalo, Iowa
E & E/FIT, May 1989
Sample Series DC943

Sample #	Element								
	As	Ba	Cd	Cr	Cu	Pb	Se	Ag	S-
SOIL*	9.3	372	<0.1	46.1	17.3	19.6	0.43	<0.5	**
KILN ASH (old ash piles)									
031	5.9J	53J	0.6J	15	38J	12	0.69J	6	53
032	5J	49J	0.53J	12	4.8J	10	0.75J	5.1	21.2
033	4.9J	36J	0.81J	12	2.2J	7.4	0.65J	4.3	10.6
034	5J	52J	<1.3	11	3.4J	6.1	0.62J	5.2	10.6
034D	5.4J	57	0.48J	12	5.3J	6.3	0.6J	5.3	21.2
(fresh kiln ash)									
040	3.6J	67	<1.0	6.8	14J	13	1.4	2.9	21.2
041	3.2J	68	<1.0	6.8	14J	8.1	0.38J	4	10.6
SEDIMENTS (Moore Creek)									
036	4.1J	160	0.87J	8.7	<7.3	6.5	0.23J	<2.9	10.6
038	6.1J	100	1.1J	18	<9.2	79	4.5	5.5	21.2
(Donaldson Creek)									
043	3.7J	775	<1.4	7.9	<6.8	9.4	0.38J	<2.7	21.2
039	5.9J	86	0.53J	16	<6.6	9.5	0.4J	<2.6	21.2
042	4.3J	79	<1.5	11	<7.3	9.4	0.44J	<2.9	10.6
SOILS									
044	5.3J	270	0.48J	15	<6.0	24	0.41J	<2.4	10.6
035	9.6J	140	<1.2J	21	<6.0	18	0.41	<2.4	10.6
037	5J	110	0.45J	16	<5.7	14	0.41J	<2.3	10.6

* SOIL is a mean of values from uncultivated B-horizon soil from the U.S. (Connor & Shacklette, 1975). All concentrations are mg/kg.

** No values available for average soil.

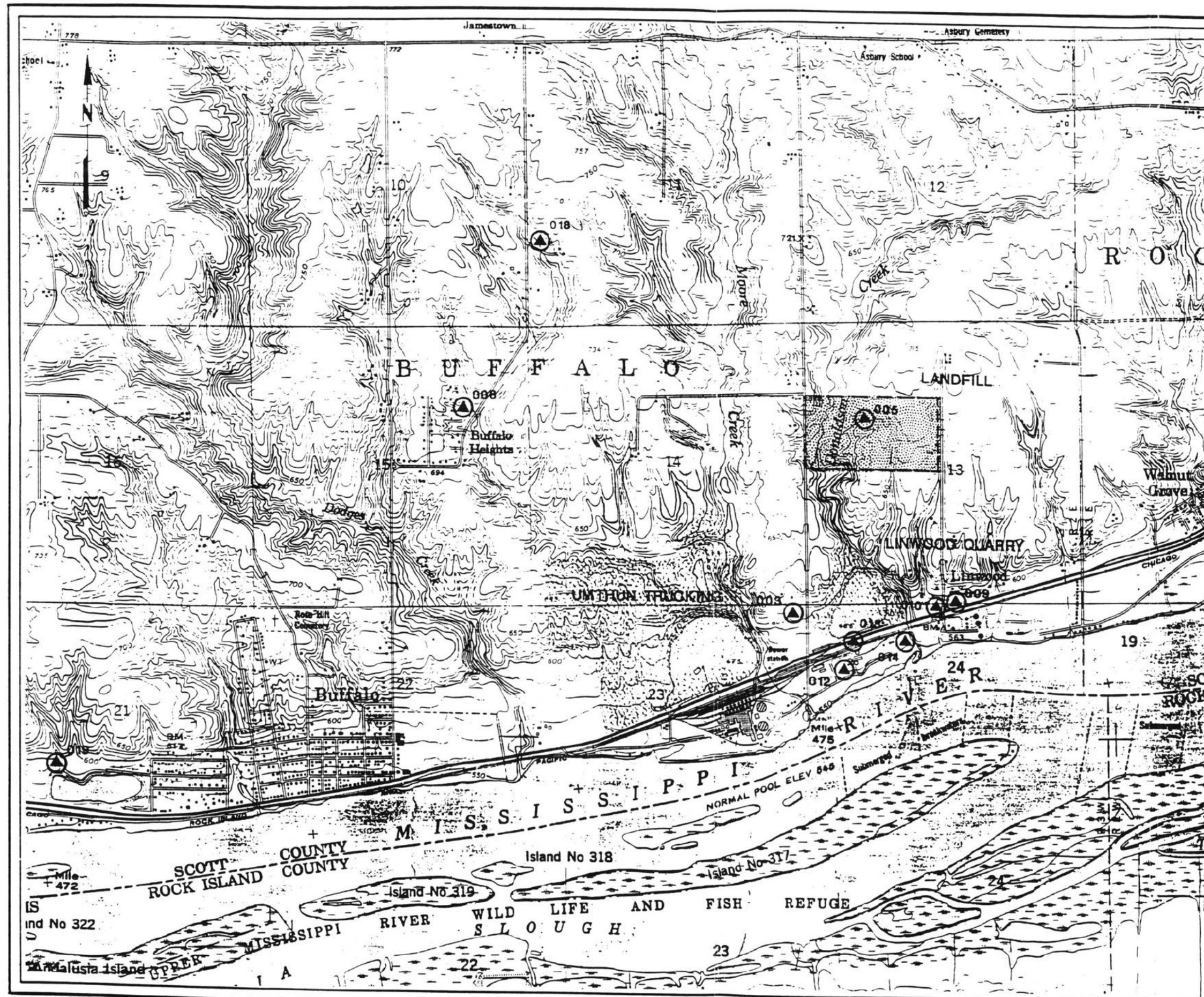
J - The associated numeric value is an estimated value (see data transmittal).

NOTE: Only detected levels are reported. See Figure 2 for sample locations and the attached data transmittal of complete analytical results. All concentrations are reported in milligrams per kilogram (mg/kg).

Table 5
Analysis of Lime Kiln Flue Gases
Linwood Quarry
Buffalo, Iowa

Source	Carbon Dioxide	Oxygen	Nitrogen	Volume	Volume	Stack Gas	Ductcross	Particulate	Particulate	Sulfer	Nitrogen
	%	%	%	ACFM	SCFM	°F	Sectional Area Ft 2	Grains/SCF	lbs/hr.	Dioxide lbs/hr.	Oxide lbs/hr
Main flue duct to mine shaft after Cyclones	10.4	10.0	79.6	151,757	5,287.360	405	38.48	0.88	701.56	329.69	123.17
#1 Kiln Before Exhaust Fan and Cyclose System	8.0	14.5	77.5	41,007	1,198,215	601	10.56	0.34	60.01	74.01	43.44
#2 Kiln-Before Exhaust Fan and Cyclone System	13.3	11.0	75.7	46,781	1,339,953	620	11.92	3.22	663.16	252.52	-----
#3 Kiln-After Exhaust Fan But Before Cyclone System	13.4	9.5	77.1	52,685	1,763,856	475	12.05	----	----	----	----

Source: Linwood Mining and Minerals.

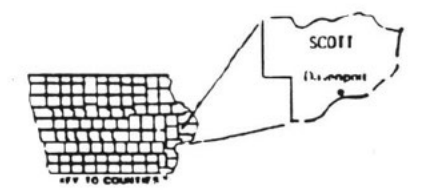


LINWOOD QUARRY SITE (Formerly Umthun Trucking)

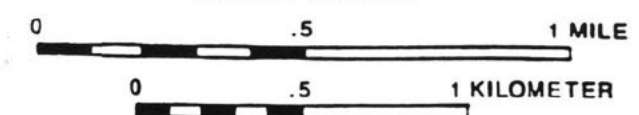
Buffalo, Iowa

WELL SAMPLE LOCATIONS

MAP LOCATION



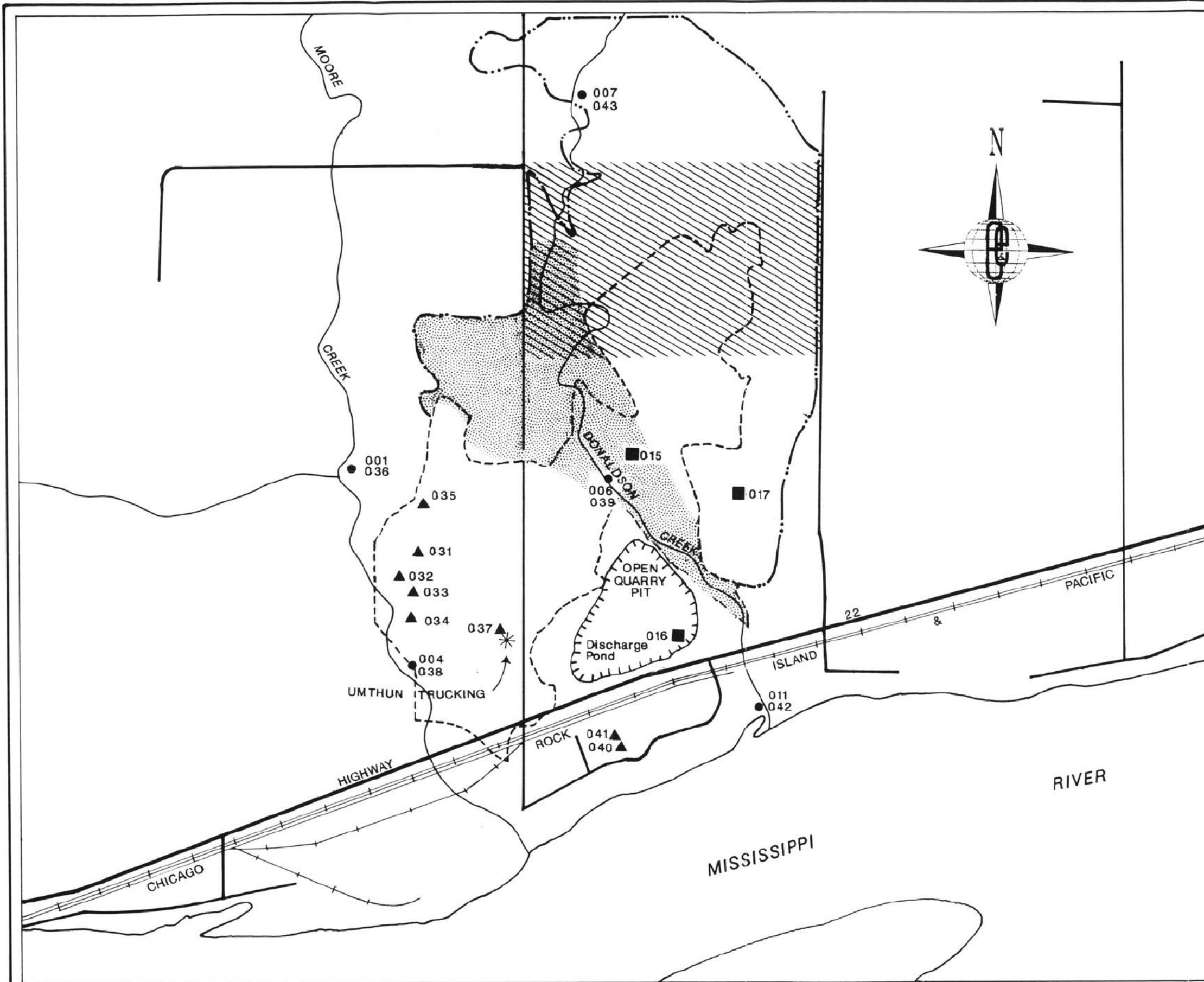
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ecology and environment, inc.
OVERLAND PARK, KANSAS

WASTE SITE TRACKING NO.: IA0238
PREPARED BY: LEE ROBERTSON FIT 1989
SOURCE: USGS ANDALUSIA, IA 1970 QUAD

Figure 1: Site Location with Well Sample Locations



EXPLANATION

- MINE WATER SAMPLES ■
- SEDIMENT AND SURFACE WATER SAMPLES ●
- SOIL & ASH SAMPLES ▲
- SCOTT COUNTY LANDFILL ▨
- ABANDONED QUARRY ⚡
- UPPER LEVEL ABANDONED: DAVENPORT FORMATION - - -
- UPPER LEVEL ACTIVE: DAVENPORT FORMATION - · - · -
- LOWER LEVEL: OTIS FORMATION ▩

**LINWOOD QUARRY SITE
(Formerly Umthun Trucking)
BUFFALO, IOWA**

SCALE IN FEET
0 500 1000 1500 2000

ecology and environment, inc.
OVERLAND PARK, KANSAS

FIT JUNE 1989

SOURCE: USGS ANDALUSIA, IA 1970 QUAD

FIGURE 2: SITE MAP WITH SAMPLE LOCATIONS

WASTE SITE TRACKING NO.: IA0236
PREPARED BY: LEE ROBERTSON

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 1 - SITE LOCATION AND INSPECTION INFORMATION		I. IDENTIFICATION <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">01 STATE IA</td> <td style="width: 50%;">02 SITE NUMBER 090852297</td> </tr> </table>		01 STATE IA	02 SITE NUMBER 090852297
01 STATE IA	02 SITE NUMBER 090852297				
II. SITE NAME AND LOCATION					
01 SITE NAME (Legal, common, or descriptive name of site) Linwood Quarry (formerly Umthun Trucking)		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER Route 22			
03 CITY Buffalo	04 STATE IA	05 ZIP CODE 52728	06 COUNTY Scott		
07 COUNTY CODE		08 CONG. DIST.			
09 COORDINATES LATITUDE LONGITUDE 41° 27'54.8"N 090° 41'04.5"W		10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN			
III. INSPECTION INFORMATION					
01 DATE OF INSPECTION 5/22/89 MO/DAY/YR		02 SITE STATUS <input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE			
03 YEARS OF OPERATION 1940 present UNKNOWN BEGINNING YEAR ENDING YEAR					
04 AGENCY PERFORMING INSPECTION (Check all that apply) <input type="checkbox"/> A. EPA <input checked="" type="checkbox"/> B. EPA CONTRACTOR Ecology & Environ. <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR <div style="display: flex; justify-content: space-between;"> (Name of firm) (Name of firm) </div> <input type="checkbox"/> E. STATE <input type="checkbox"/> F. STATE CONTRACTOR <input type="checkbox"/> G. OTHER <div style="display: flex; justify-content: space-between;"> (Name of firm) (Specify) </div>					
05 CHIEF INSPECTOR Wesley McCall		06 TITLE Environmental Specialist	07 ORGANIZATION E & E/FIT		
08 TELEPHONE NO. (913)432-9961					
09 OTHER INSPECTORS Gayle Hubert		10 TITLE Geologist	11 ORGANIZATION E & E/FIT		
12 TELEPHONE NO. (913)432-9961					
Rob Parsons		Chemist	E & E/FIT		
(913)432-9961					
Debbie Fischer		Geologist	E & E/FIT		
(913)432-9961					
13 SITE REPRESENTATIVES INTERVIEWED Gaillard Krewer		14 TITLE Mine Engineer	15 ADDRESS 401 E. Front St. Davenport		
16 TELEPHONE NO. (319)324-1931					
Alvin Lee		Assistant Plant Mgr.	401 E. Front St. Davenport		
(319)324-1931					
Bob Niemala		Mine Manager	401 E. Front St. Davenport		
(319)324-1931					
Kevin Powell		Terminal Manager	Umthun Terminal Buffalo, Iowa		
(319)381-1123					
17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT		18 TIME OF INSPECTION daylight			
19 WEATHER CONDITIONS Clear, Sunny, '60°F					
IV. INFORMATION AVAILABLE FROM					
01 CONTACT Pete Culver		02 OF (Agency/Organization) Region VII, U.S. EPA Superfund			
03 TELEPHONE NO. (913)236-2836					
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Wesley McCall		05 AGENCY E & E	06 ORGANIZATION FIT		
07 TELEPHONE NO. 913-432-9961		08 DATE 11/17/89			

POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION	
SITE INSPECTION REPORT		01 STATE	02 SITE NUMBER
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS		IA	D90852297
II. HAZARDOUS CONDITIONS AND INCIDENTS			
01 <u>X</u> A. GROUNDWATER CONTAMINATION	02 <u>X</u> OBSERVED (DATE: 8/25/83)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u>unknown</u> 04 NARRATIVE DESCRIPTION			
Heavy metals contamination of private well. Population potentially affected probably <50. The well has been re-cased and is no longer contaminated.			
01 <u> </u> B. SURFACE WATER CONTAMINATION	02 <u> </u> OBSERVED (DATE: <u> </u>)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u> </u> 04 NARRATIVE DESCRIPTION			
None known or observed to date.			
01 <u> </u> C. CONTAMINATION OF AIR	02 <u> </u> OBSERVED (DATE: <u> </u>)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u> </u> 04 NARRATIVE DESCRIPTION			
None known or observed to date.			
01 <u> </u> D. FIRE/EXPLOSIVE CONDITIONS	02 <u> </u> OBSERVED (DATE: <u> </u>)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u> </u> 04 NARRATIVE DESCRIPTION			
None known or observed to date.			
01 <u> </u> E. DIRECT CONTACT	02 <u> </u> OBSERVED (DATE: <u> </u>)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u> </u> 04 NARRATIVE DESCRIPTION			
None known or observed to date.			
01 <u>X</u> F. CONTAMINATION OF SOIL	02 <u>X</u> OBSERVED (DATE: 5/22/89)	POTENTIAL	ALLEGED
03 AREA POTENTIALLY AFFECTED: <u>3</u> 04 NARRATIVE DESCRIPTION			
(Acres) Area covered by kiln fly ash dumped on soil surface.			
01 <u>X</u> G. DRINKING WATER CONTAMINATION	02 <u>X</u> OBSERVED (DATE: <u> </u>)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u>unknown</u> 04 NARRATIVE DESCRIPTION			
Private well of Umthun Trucking terminal contaminated by heavy metals pH ~2.7, population affected probably <50. See ground water above.			
01 <u>X</u> H. WORKER EXPOSURE/INJURY	02 <u> </u> OBSERVED (DATE: <u> </u>)	POTENTIAL	<u>X</u> ALLEGED
03 WORKERS POTENTIALLY AFFECTED: <u>unknown</u> 04 NARRATIVE DESCRIPTION			
Truck drivers stay overnight at terminal, showered in and drank contaminated well water. Population affected probably <50. The well has been recased and is no longer contaminated.			
01 <u> </u> I. POPULATION EXPOSURE/INJURY	02 <u> </u> OBSERVED (DATE: <u> </u>)	POTENTIAL	ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u> </u> 04 NARRATIVE DESCRIPTION			
No one other than workers at terminal exposed.			

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT		I. IDENTIFICATION	
EPA	PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS	01 STATE IA	02 SITE NUMBER D90852297
II. HAZARDOUS CONDITIONS AND INCIDENTS (CONTINUED)			
01 <u> </u> J. DAMAGE TO FLORA	02 <u> </u> OBSERVED (DATE: <u> </u>)	<u> </u> POTENTIAL	<u> </u> ALLEGED
04 NARRATIVE DESCRIPTION None known or observed to date.			
01 <u> </u> K. DAMAGE TO FAUNA	02 <u> </u> OBSERVED (DATE: <u> </u>)	<u> </u> POTENTIAL	<u> </u> ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species) None known or observed to date.			
01 <u> </u> L. CONTAMINATION OF FOOD CHAIN	02 <u> </u> OBSERVED (DATE: <u> </u>)	<u> </u> POTENTIAL	<u> </u> ALLEGED
04 NARRATIVE DESCRIPTION None known or observed to date.			
01 <u> </u> X M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums)	02 <u> </u> X OBSERVED (DATE: <u>5/22/89</u>)	<u> </u> POTENTIAL	<u> </u> ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u>unknown</u> 04 NARRATIVE DESCRIPTION Surface dumped fly ash, no liner, no containment or diking.			
01 <u> </u> X N. DAMAGE TO OFFSITE PROPERTY	02 <u> </u> X OBSERVED (DATE: <u>8/25/83</u>)	<u> </u> POTENTIAL	<u> </u> ALLEGED
04 NARRATIVE DESCRIPTION Heavy metals contamination of private well. See ground water above.			
01 <u> </u> O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs	02 <u> </u> OBSERVED (DATE: <u> </u>)	<u> </u> POTENTIAL	<u> </u> ALLEGED
04 NARRATIVE DESCRIPTION None known or observed to date.			
01 <u> </u> X P. ILLEGAL/UNAUTHORIZED DUMPING	02 <u> </u> OBSERVED (DATE: <u> </u>)	<u> </u> X POTENTIAL	<u> </u> ALLEGED
04 NARRATIVE DESCRIPTION Linwood Quarry is presently in a discussion with IDNR concerning permitting for dumping dust-laden mine water into quarry pond.			
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS			
III. TOTAL POPULATION POTENTIALLY AFFECTED: <u>unknown</u>			
IV. COMMENTS			
V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)			
EPA, 1983 to 1988 E & E/FIT, November, 1989 Robertson, 1983			

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 4 -- PERMIT AND DESCRIPTIVE INFORMATION					I. IDENTIFICATION	
EPA					01 STATE IA	02 SITE NUMBER D90852297
II. PERMIT INFORMATION						
01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS		
<u> </u> A. NPDES						
<u> </u> B. UIC						
<u> </u> C. AIR						
<u> </u> D. RCRA						
<u> </u> E. RCRA INTERIM STATUS						
<u> </u> F. SPCC PLAN						
<u> X</u> G. STATE (Specify)	unknown					
<u> </u> H. LOCAL (Specify)						
<u> </u> I. OTHER (Specify)						
<u> </u> J. NONE						
III. SITE DESCRIPTION						
01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 Other		
<u> </u> A. SURFACE IMPOUNDMENT			<u> </u> A. INCINERATION <small>none</small>	<u> </u> A. BUILDINGS ON SITE		
<u> X</u> B. PILES	~100,000	cubic yards	<u> </u> B. UNDERGROUND INJECTION			
<u> </u> C. DRUMS, ABOVE GROUND			<u> </u> C. CHEMICAL/PHYSICAL			
<u> </u> D. TANK, ABOVE GROUND			<u> </u> D. BIOLOGICAL			
<u> </u> E. TANK, BELOW GROUND			<u> </u> E. WASTE OIL PROCESSING	06 AREA OF SITE		
<u> </u> F. LANDFILL			<u> </u> F. SOLVENT RECOVERY	~500 (Acres)		
<u> </u> G. LANDFARM			<u> </u> G. OTHER RECYCLING/RECOVERY	Area of mine works.		
<u> </u> H. OPEN DUMP			<u> </u> H. OTHER (Specify)			
<u> </u> I. OTHER (Specify)						
07 COMMENTS						
IV. CONTAINMENT						
01 CONTAINMENT OF WASTES (Check one)						
<u> </u> A. ADEQUATE, SECURE <u> </u> B. MODERATE <u> X</u> C. INADEQUATE, POOR <u> </u> D. INSECURE, UNSOUND, DANGEROUS						
02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.						
Approximately 3 acres covered with 20 to 25 feet of fly ash from lime kilns, no liners, no diking or barriers to prevent off site migration via surface runoff, or recharge infiltration.						
V. ACCESSIBILITY						
01 WASTE EASILY ACCESSIBLE: <u> X</u> YES <u> </u> NO						
02 COMMENTS						
Surface dumped ash is not covered, inadequate fencing, open gates.						
VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)						
Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), November, 1989, Data Summary for the Linwood Quarry Site, TDD #F-07-8809-008. Ecology and Environment, Inc., June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008. Krewer, Gaillard, November 16, 1989, personal communication, Mine Engineer, Linwood Quarry, Buffalo, Iowa.						

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT			I. IDENTIFICATION	
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA			01 STATE IA	02 SITE NUMBER D90852297
II. DRINKING WATER SUPPLY				
01 TYPE OF DRINKING SUPPLY (Check as applicable) <div style="display: flex; justify-content: space-between;"> <div> SURFACE COMMUNITY A. _____ NON-COMMUNITY C. _____ </div> <div> WELL B. <input checked="" type="checkbox"/> D. <input checked="" type="checkbox"/> </div> </div>		02 STATUS <div style="display: flex; justify-content: space-between;"> <div> --ENDANGERED A. _____ D. _____ </div> <div> AFFECTED B. _____ E. _____ </div> <div> MONITORED C. <input checked="" type="checkbox"/> F. _____ </div> </div>		03 DISTANCE TO SITE A. ~3.5 (mi) B. <0.1 (mi)
III. GROUNDWATER				
01 GROUNDWATER USE IN VICINITY (Check one) <input checked="" type="checkbox"/> A. ONLY SOURCE FOR DRINKING <input type="checkbox"/> B. DRINKING (Other sources available) <input type="checkbox"/> C. COMMERCIAL, INDUSTRIAL IRRIGATION (Limited other sources available) <input type="checkbox"/> D. NOT USED, UNUSABLE COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)				
02 POPULATION SERVED BY GROUND WATER ~4400		03 DISTANCE TO NEAREST DRINKING WATER WELL <0.1 (mi)		
04 DEPTH TO GROUNDWATER 200 to 350 (ft)	05 DIRECTION OF GROUNDWATER FLOW SSE	06 DEPTH TO AQUIFER OF CONCERN 200 (ft)	07 POTENTIAL YIELD OF AQUIFER ~400,000 (gpd)	08 SOLE SOURCE AQUIFER YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings) Buffalo, Iowa municipal well, 405 feet deep, west edge of town.				
10 RECHARGE AREA <input type="checkbox"/> YES <input type="checkbox"/> NO COMMENTS unknown		11 DISCHARGE AREA <input type="checkbox"/> YES <input type="checkbox"/> NO COMMENTS unknown		
IV. SURFACE WATER				
01 SURFACE WATER USE (Check one) <input checked="" type="checkbox"/> A. RESERVOIR, RECREATION DRINKING WATER SOURCE <input type="checkbox"/> B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES <input type="checkbox"/> C. COMMERCIAL, INDUSTRIAL <input type="checkbox"/> D. NOT CURRENTLY USED				
02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER <div style="display: flex; justify-content: space-between;"> <div>NAME:</div> <div>AFFECTED</div> <div>DISTANCE TO SITE</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Mississippi River</div> <div>---</div> <div>On river bank (mi)</div> </div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>---</div> <div>_____ (mi)</div> </div> <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>---</div> <div>_____ (mi)</div> </div>				
V. DEMOGRAPHIC AND PROPERTY INFORMATION				
01 TOTAL POPULATION WITHIN <div style="display: flex; justify-content: space-between;"> <div>ONE (1) MILE OF SITE A. ~215 NO. OF PERSONS</div> <div>TWO (2) MILES OF SITE B. ~1,200 NO. OF PERSONS</div> <div>THREE (3) MILES OF SITE C. ~4400 NO. OF PERSONS</div> </div>			02 DISTANCE TO NEAREST POPULATION Adjacent to site (mi)	
03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE ~300		04 DISTANCE TO NEAREST OFF-SITE BUILDING <0.1 (mi)		
05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area) The majority of the population within three miles of the site is in the small towns of Buffalo and Andalusia with scattered rural homes. The suburban and urban areas of Davenport, Iowa, are outside of the three-mile radius.				

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 6 - SAMPLE AND FIELD INFORMATION		I. IDENTIFICATION	
EPA		01 STATE IA	02 SITE NUMBER D90852297
II. SAMPLES TAKEN			
SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	10	Region VII EPA Lab	10/12/89
SURFACE WATER	5	Region VII EPA Lab	10/12/89
WASTE kiln ash	7	Region VII EPA Lab	10/12/89
AIR	0		
RUNOFF	0		
SPILL	0		
SOIL	3	Region VII EPA Lab	10/12/89
VEGETATION	0		10/12/89
OTHER sediment	5	Region VII EPA Lab	10/12/89
III. FIELD MEASUREMENTS TAKEN			
01 TYPE Conductivity	02 COMMENTS wells on site slightly higher than background		
pH	discharge pond in old quarry has a pH ~9.8		
IV. PHOTOGRAPHS AND MAPS			
01 TYPE <input type="checkbox"/> GROUND <input type="checkbox"/> AERIAL		02 IN CUSTODY OF _____ (Name of organization or individual)	
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS Region VII EPA site files/Ecology and Environment, Inc.		
V. OTHER FIELD DATA COLLECTED (Provide narrative description)			
None			
VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			
Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), November 1989, Data Summary for the Linwood Quarry Site, TDD #F-07-8809-008. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), May 8, 1989, Work Plan for the Screening Site Inspection of the Umthun Truckin/Linwood Quarry site, TDD #F-07-8809-008.			

POTENTIAL HAZARDOUS WASTE SITE				I. IDENTIFICATION	
SITE INSPECTION REPORT				01 STATE IA	02 SITE NUMBER D90852297
PART 7 - OWNER INFORMATION					
II. CURRENT OWNER(S)			PARENT COMPANY (If applicable)		
01 NAME Linwood Mining and Minerals Corp.		02 D+B NUMBER		08 NAME McCarthy Improvement Co.	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) 401 East Front St.		04 SIC CODE		09 D+B NUMBER	
05 CITY Davenport		06 STATE IA		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.) 4321 East 60th	
07 ZIP CODE 52804		12 CITY Davenport		11 SIC CODE	
13 STATE IA		14 ZIP CODE 52804			
01 NAME		02 D+B NUMBER		08 NAME	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE		09 D+B NUMBER	
10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE			
05 CITY		06 STATE		07 ZIP CODE	
12 CITY		13 STATE		14 ZIP CODE	
01 NAME		02 D+B NUMBER		08 NAME	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE		09 D+B NUMBER	
10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE			
05 CITY		06 STATE		07 ZIP CODE	
12 CITY		13 STATE		14 ZIP CODE	
III. PREVIOUS OWNER(S) (List most recent first)			IV. REALTY OWNER(S) (If applicable; list most recent first)		
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		02 D+B NUMBER	
05 CITY		06 STATE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
07 ZIP CODE		04 SIC CODE		04 SIC CODE	
05 CITY		06 STATE		05 CITY	
07 ZIP CODE		06 STATE		07 ZIP CODE	
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		02 D+B NUMBER	
05 CITY		06 STATE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
07 ZIP CODE		06 STATE		04 SIC CODE	
01 NAME		02 D+B NUMBER		05 CITY	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		06 STATE	
05 CITY		07 ZIP CODE		07 ZIP CODE	
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		02 D+B NUMBER	
05 CITY		06 STATE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
07 ZIP CODE		06 STATE		04 SIC CODE	
01 NAME		02 D+B NUMBER		05 CITY	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		06 STATE	
05 CITY		07 ZIP CODE		07 ZIP CODE	
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					
Personal communication with Gaillard Krewer, Mine Engineer. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008.					

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 8 - OPERATOR INFORMATION				I. IDENTIFICATION	
EPA				01 STATE IA	02 SITE NUMBER D90852297
II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME Same as owner		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE	12 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				
III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					
Personal communication with Gaillard Krewer, Mine Engineer. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008.					

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 9 - GENERATOR/TRANSPORTER INFORMATION				I. IDENTIFICATION	
EPA				01 STATE IA	02 SITE NUMBER D90852297
II. ON-SITE GENERATOR					
01 NAME Same as owner.		02 D+B NUMBER			
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE			
III. OFF-SITE GENERATOR(S)					
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE			
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE			
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE			
IV. TRANSPORTER(S)					
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE			
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE			
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					
Personal communication with Gaillard Krewer, Mine Engineer. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008.					

EPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES		I. IDENTIFICATION	
				01 STATE IA	02 SITE NUMBER D980852297
II. PAST RESPONSE ACTIVITIES					
01	A. WATER SUPPLY CLOSED	02 DATE		03 AGENCY	
04	DESCRIPTION No response activities known at this time.				
01	B. TEMPORARY WATER SUPPLY PROVIDED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	C. PERMANENT WATER SUPPLY PROVIDED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	D. SPILLED MATERIAL REMOVED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	E. CONTAMINATED SOIL REMOVED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	F. WASTE REPACKAGED	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	G. WASTE DISPOSED ELSEWHERE	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	H. ON SITE BURIAL	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	I. IN SITU CHEMICAL TREATMENT	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	J. IN SITU BIOLOGICAL TREATMENT	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	K. IN SITU PHYSICAL TREATMENT	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	L. ENCAPSULATION	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	M. EMERGENCY WASTE TREATMENT	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	N. CUTOFF WALLS	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	O. EMERGENCY DIKING/SURFACE WATER DIVERSION	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	P. CUTOFF TRENCHES/SUMP	02 DATE		03 AGENCY	
04	DESCRIPTION				
01	Q. SUBSURFACE CUTOFF WALL	02 DATE		03 AGENCY	
04	DESCRIPTION				

POTENTIAL HAZARDOUS WASTE SITE

EPA

SITE INSPECTION REPORT

PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE IA	02 SITE NUMBER D980852297
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II. PAST RESPONSE ACTIVITIES (Continued)

01	R. BARRIER WALLS CONSTRUCTED	02 DATE	03 AGENCY
04	DESCRIPTION		

01	S. CAPPING/COVERING.	02 DATE	03 AGENCY
04	DESCRIPTION		

01	T. BULK TANKAGE REPAIRED	02 DATE	03 AGENCY
04	DESCRIPTION		

01	U. GROUT CURTAIN CONSTRUCTED	02 DATE	03 AGENCY
04	DESCRIPTION		

01	V. BOTTOM SEALED	02 DATE	03 AGENCY
04	DESCRIPTION		

01	W. GAS CONTROL	02 DATE	03 AGENCY
04	DESCRIPTION		

01	X. FIRE CONTROL	02 DATE	03 AGENCY
04	DESCRIPTION		

01	Y. LEACHATE TREATMENT	02 DATE	03 AGENCY
04	DESCRIPTION		

01	Z. AREA EVACUATED	02 DATE	03 AGENCY
04	DESCRIPTION		

01	1. ACCESS TO SITE RESTRICTED	02 DATE _____	03 AGENCY _____
04	DESCRIPTION		

01	<u> </u> 2. POPULATION RELOCATED	02 DATE _____	03 AGENCY _____
04	DESCRIPTION		

01	<u>X</u> 3. OTHER REMEDIAL ACTIVITIES	02 DATE	03 AGENCY
04	DESCRIPTION		
	Private well at Umthun Trucking recased and grouted to eliminate heavy metals contamination and low pH.		

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), November 1989, Data Summary for the Linwood Quarry Site, TDD #F-07-8809-008.
Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008.
Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), May 8, 1989, Work Plan for the Screening Site Inspection of the Umthun Trucking/Linwood Quarry Site, TDD #F-07-8809-008.

EPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION		I. IDENTIFICATION	
				01 STATE IA	02 SITE NUMBER D980852297
II. ENFORCEMENT INFORMATION					
01 PAST REGULATORY/ENFORCEMENT ACTION <input type="checkbox"/> YES <input type="checkbox"/> NO					
02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION None known at this time.					
III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					
Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), November 1989, Data Summary for the Linwood Quarry Site, TDD #F-07-8809-008. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 14, 1989, Trip Report for the Linwood Quarry Site, TDD #F-07-8809-008. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), May 8, 1989, Work Plan for the Screening Site Inspection of the Umthun Trucking/Linwood Quarry Site, TDD #F-07-8809-008.					

1A. Cost Center: FT 1307		FIT ZONE II CONTRACT Contract Number 68-01-7347 TECHNICAL DIRECTIVE DOCUMENT (TDD)			2. TDD Number: F-07-8809-008	
1B. Account Number: FIA0236SA					2A. Amendment: * <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> Technical	
3A. Priority: <input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low		3B. Key EPA Contact: Name: <u>Pete Culver</u> Phone: <u>913-236-2856</u>				
4A. Estimate of Technical Hours: * 578	4B. Subcontract: N/A	4C. Estimate of Subcontract Cost: N/A	5A. SSID Number: Unassigned	5B. CERID Number: IAD980852297		
5C. EPA Site Name: Umthun Trucking			5D. City/County/State: Buffalo/Scott/Iowa			
6. Desired Report Format: <input checked="" type="checkbox"/> Formal Report <input type="checkbox"/> Standard Report <input type="checkbox"/> Other (Specify): <input type="checkbox"/> Letter Report <input type="checkbox"/> Formal Briefing			7A. Activity Start Date: 9/26/88	7B. Estimated Completion Date: * 12/31/89		
8A. Type of Activity: <input type="checkbox"/> PA <input type="checkbox"/> RCRA-PA <input type="checkbox"/> HRS Support <input type="checkbox"/> Enforcement Support <input type="checkbox"/> Training <input checked="" type="checkbox"/> SI <input type="checkbox"/> RCRA-SI <input type="checkbox"/> QA Support <input type="checkbox"/> Program Management <input type="checkbox"/> General Technical Assistance <input type="checkbox"/> ESI <input type="checkbox"/> Special Studies <input type="checkbox"/> Equipment Maintenance					8B. FIT/SCAP Goal: Will Deliverable Meet a Unit of the Goal? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
9. General Task Description: <u>Conduct a site investigation of Umthun Trucking Company in Buffalo, Iowa.</u>						
10. Specific Elements: <u>1. Perform site reconnaissance and state file review;</u> <u>2. Prepare work plan for site investigation;</u> <u>*3. Implement work plan after EPA approval.</u> <u>*4. Prepare trip report within 3 weeks of field work.</u> <u>*5. Prepare final report & SI form within 6 weeks of receipt of data transmittal.</u>						
					11. Interim Deadlines: <u>11/30/88</u> <div style="border: 2px solid black; padding: 5px; text-align: center; font-weight: bold;">RECEIVED</div> <u>MAY 11 1989</u> <u>E & E K. C. K.</u> 5) est. 10/31/89 *	
12. Comments: <u>*Amended from 105 to 578 hours to implement field work and prepare final report for screening site investigation.</u>						
13. Authorizing: <u>Pete Culver</u> (Signature)					<input checked="" type="checkbox"/> RPO <input type="checkbox"/> DPO <input type="checkbox"/> PO	
15. Received by: <u>John A. Dale</u> (Contractor FITOM Signature)					<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Accepted with Exceptions (Attached) <input type="checkbox"/> Rejected	
					14. Date: <u>5/9/89</u>	
					16. Date: <u>5/12/89</u>	

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) <u>Wes McCall</u>	NAME OF SURVEY OR ACTIVITY <u>Umthun Trucking</u>	DATE OF COLLECTION <u>23</u> <u>5</u> <u>89</u> DAY MONTH YEAR	SHEET <u>1</u> of <u>2</u>
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
DC943001	1	2				X					
DC943002	3					X					FIA 0236SA, 24
DC943003	1	2				X					
DC943004	1	2				X					
DC943005	1	2				X					
DC943006	1	2				X					
DC943007	1	2				X					
DC943008	1	2				X					
DC943009	1	2				X					
DC943010	1	2				X					
DC943011	1	2				X					
DC943012	1	2				X					
DC943013	1	2				X					
DC943014	1	2				X					
DC943015	1	2				X					
DC943016	1	2				X					
DC943017	1	2				X					
DC943017D	1	2				X					
DC943018	1	2				X					
DC943019	1	2				X					

DESCRIPTION OF SHIPMENT _____ PIECE(S) CONSISTING OF _____ BOX(ES) <u>5</u> ICE CHEST(S); OTHER _____	MODE OF SHIPMENT _____ COMMERCIAL CARRIER: _____ _____ COURIER <input checked="" type="checkbox"/> SAMPLER CONVEYED _____ (SHIPPING DOCUMENT NUMBER)
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PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER) <u>Gayle Hays</u> <input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	DATE <u>5/25/89</u>	TIME <u>1300</u>	RECEIVED BY <u>Wes McCall</u> <input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	REASON FOR CHANGE OF CUSTODY <u>Deliver to EPA LAB</u>
RELINQUISHED BY <u>Wes McCall</u> <input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	DATE <u>5/25/89</u>	TIME <u>1300</u>	RECEIVED BY <u>Wes McCall</u> <input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	REASON FOR CHANGE OF CUSTODY <u>Analysis</u>
RELINQUISHED BY <u>Wes McCall</u> <input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	DATE <u>5/25/89</u>	TIME <u>1300</u>	RECEIVED BY <u>Wes McCall</u> <input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	REASON FOR CHANGE OF CUSTODY <u>Analysis</u>

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) <i>Wes McCull</i>	NAME OF SURVEY OR ACTIVITY <i>Weather Trucking</i>	DATE OF COLLECTION DAY <i>23</i> MONTH <i>5</i> YEAR <i>89</i>	SHEET <i>2</i> of <i>2</i>
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS				VOA SET (2 VIALS EA)	SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE		water	soil	sediment	dust	other	
DC9430031		3								X	FIA0236SA, 24
DC9430032		3								X	
DC9430033		3								X	
DC9430034		3								X	
DC9430034up		3								X	
DC9430035		3					X				
DC9430036		3						X			
DC9430037		3					X				
DC9430038		3						X			
DC9430039		3						X			
DC9430040		3								X	
DC9430041		3								X	
DC9430042		3						X			
DC9430043		3						X			
DC9430044		3					X				

DESCRIPTION OF SHIPMENT _____ PIECE(S) CONSISTING OF _____ BOX(ES) _____ ICE CHEST(S); OTHER _____	MODE OF SHIPMENT _____ COMMERCIAL CARRIER: _____ _____ COURIER <input checked="" type="checkbox"/> SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____
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PERSONNEL CUSTODY RECORD				
RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
<i>Harold Hays</i>	<i>5/25/89</i>	<i>1300</i>	<i>Wesley McCall</i>	<i>Delivers to EPA Lab</i>
<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
<i>Wesley McCall</i>	<i>5/25/89</i>		<i>John W. Menden</i>	<i>Analysis</i>
<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED			<input type="checkbox"/> SEALED <input type="checkbox"/> UNSEALED	



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

DATE: 8/3/89

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: DC943
Site Description: Unithun Trucking

FROM: Andrea Jirka *X*
Chief, Laboratory Branch, ENSV

TO: Mike Sanderson
Chief, Superfund Branch, WSTM

ATTN: P. Culver

Attached is the data transmittal for the above referenced site. These data have met all quality assurance requirements unless indicated otherwise in the data package. This should be considered a X Partial or Complete data transmittal (completes transmittal of). If you have any questions or comments, please contact Dee Simmons at 236-3881.

Attachments

cc: Data Files
Ann Melia, E&E/FIT

DATA REPORTING / QUALIFICATION CODES

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample detection limit.
- J - The associated numerical value is an estimated quantity (explanation attached).
- I - The data are invalid (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
- N - Sample not analyzed.

CODES FOR FLASH POINT DATA

- L - The sample did not ignite or "flash". This is the highest temperature at which the sample was tested. It is possible that the material may be ignitable at higher temperatures.
- K - The sample did ignite or "flash" at the lowest temperature tested. This is usually the ambient temperature at the time of the test. It is possible that the material may be ignitable at even lower temperatures.

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMTHUN TRUCKING Site Number: _____
Location: BUFFALO IA Site Code: _____

Collected: YR: 89 MO: 5 Day: 23 Time: 1020 Leader: WES MCCALL

Sample Number: DC943001 SMO #: _____

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

Sample Container : Tag Color : Preservative : Analysis Requested :

CUBITAINER	:	:	HN03/4 C	:	TOTAL METALS
1 GAL. AMBER	:	:	HN03/4 C	:	DISSOLVED METAL
1 GAL. AMBER	:	:	4 C	:	SULFATE
1 GAL. AMBER	:	:	4 C	:	CHLORIDE

Depth: _____ Pan #: _____ Aliquots: 1

Samplers: G. Hays
R. Parsons

COMMENTS OF FIELD PERSONNEL

Site Description: Background on Moore Creek

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMTHUN TRUCKING Site Number: _____
Location: BUFFALO IA Site Code: _____

Collected: YR: 89 MO: 5 Day: 23 Time: 1110 Leader: WES MCCALL
Sample Number: DC943003 SMO #: _____
Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____
Sample Split (circle one): YES NO

Sample Container	Tag Color	Preservative	Analysis Requested
CUBITAINER	:	HNO3/4 C	TOTAL METALS
CUBITAINER	:	HNO3/4 C	DISSOLVED METAL
1 GAL. AMBER	:	4 C	SULFATE
1 GAL. AMBER	:	4 C	CHLORIDE

Depth: 300' Pan #: _____ Aliquots: _____

Samplers: G. Hays
R. Parsons

COMMENTS OF FIELD PERSONNEL

Site Description: Umthun well

pH = 7.63

Temp. = 25°C

Cond. = 500 μ mhos

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

IEM-FC

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMTHUN TRUCKING Site Number: :
Location: BUFFALO IA Site Code: :

Collected: YR: 89 MO: 5 Day: 23 Time: 1400 Leader: WES MCCALL :

Sample Number: DC943065 SMD #: :

Sample Media (circle one): :

SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____ :

Sample Split (circle one): YES NO :

Sample Container : Tag Color : Preservative : Analysis Requested :

CUBITAINER : HNO3/4 C : TOTAL METALS :

~~CUBITAINER~~ : ~~HNO3/4 C~~ : ~~DISPERSED METALS~~ :

1 GAL.AMBER : 4 C : SULFATE :

1 GAL.AMBER : 4 C : CHLORIDE :

Depth: 325' Pan #: _____ Aliquots: _____ :

Samplers: G. Hays :

R. Parsons :

COMMENTS OF FIELD PERSONNEL

Site Description: Scott Co. Landfill Well :

pH = 7.67 :

Cond. = 500 umhos :

Temp. = 13°C :

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMT HUN TRUCKING Site Number: _____
Location: BUFFALO IA Site Code: _____

Collected: YR: 89 MO: 5 Day: 23 Time: 1415 Leader: WES MCCALL

Sample Number: DC943006 SMO #: _____

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

Sample Container : Tag Color : Preservative : Analysis Requested :

CUBITAINER	:	:	HN03/4 C	:	TOTAL METALS	:
CUBITAINER	:	:	HN03/4 C	:	DISSOLVED METAL	:
1 GAL. AMBER	:	:	4 C	:	SULFATE	:
1 GAL. AMBER	:	:	4 C	:	CHLORIDE	:

Depth: _____ Fan #: _____ Aliquots: _____

Samplers: G. Hays

R. Parsons

COMMENTS OF FIELD PERSONNEL

Site Description: Donaldson Creek (between
Landfill & Quarry).

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

: Site Name: UMTOWN TRUCKING : Site Number: :
: Location: BUFFALO IA : Site Code: :

: Collected: YR: 89 MO: 5 Day: 23 Time: 1700 Leader: WES MCCALL :

: Sample Number: DC943008 SMO #: :

: Sample Media (circle one): :
: SOIL, DUST, RINSATE, SEDIMENT, WATER OTHER: _____ :

: Sample Split (circle one): YES NO :

: Sample Container : Tag Color : Preservative : Analysis Requested :

: CUBITAINER :	: HNO3/4 C :	: TOTAL METALS :
: CUBITAINER :	: HNO3/4 C :	: DISSOLVED METALS :
: 1 GAL. AMBER :	: 4 C :	: SULFATE :
: 1 GAL. AMBER :	: 4 C :	: CHLORIDE :

: Depth: 300' Fan #: _____ Aliquots: _____ :

: Samplers: G. Hays :
: R. Parsons :

COMMENTS OF FIELD PERSONNEL

: Site Description: :

(b) (9)

(b) (9)

pH = 7.4
cond = 685
Temp = 14°C

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 64115

Collected: YR: 89 MO: 5 Day: 24 Time: 0930 Leader: WES MCCALL

Sample Number: DC9430 09 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

[illegible]

Depth: 300' Fan #: _____ Aliquots: _____
 Samplers: G. Hays
R. Parsons

Site Description:

(b) (9)

$pH = 7.71$
 $\text{cond} = 650 \mu\text{mhos}$
 $T_{\text{emp}} = 17^{\circ}\text{C}$

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMTUN TRUCKING Site Number:
Location: BUFFALO IA Site Code:

Collected: YR: 89 MO: 5 Day: 24 Time: 1020 Leader: WES MCCALL

Sample Number: DC9430010 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER:

Sample Split (circle one): YES NO

Sample Container : Tag Color : Preservative : Analysis Requested :

CUBITAINER	:	:	HNO3/4 C	:	TOTAL METALS
CUBITAINER	:	:	HNO3/4 C	:	DISSOLVED METAL L8
1 GAL. AMBER	:	:	4 C	:	SULFATE
1 GAL. AMBER	:	:	4 C	:	CHLORIDE

Depth: Pan #: Aliquots:

Samplers: G. Hays

R. Parsons

COMMENTS OF FIELD PERSONNEL

(b) (9)

(smells like sulfur)
pH = 7.7
Cond = 1300 umhos
Temp = 15°C
complaints of lime settlement

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMTHUN TRUCKING Site Number: _____
Location: BUFFALO IA Site Code: _____

Collected: YR: 89 MO: 5 Day: 23 Time: 09:25 Leader: WES MCCALL

Sample Number: DC943011 SMO #: _____

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

Sample Container : Tag Color : Preservative : Analysis Requested :

CUBITAINER	:	:	HN03/4 C	:	TOTAL METALS	:
CUBITAINER	:	:	HN03/4 C	:	PRECIPITATED METALS	:
1 GAL. AMBER	:	:	4 C	:	SULFATE	:
1 GAL. AMBER	:	:	4 C	:	CHLORIDE	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:

Depth: surface Fan #: _____ Aliquots: _____

Samplers: Wes McCall
Bobbie Palmer

COMMENTS OF FIELD PERSONNEL

Site Description: Linwood Quarry : Confluence of
Ronaldson Creek with Minnippi
River.
Conductivity = 700 u.m.h.s
Temp = 17°C
pH = 6.5

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

: Site Name: UMTHUN TRUCKING Site Number: :
: Location: BUFFALO IA Site Code: :

: Collected: YR: 89 MO: 5 Day: 23 Time: 10:58 Leader: WES MCCALL :
:

: Sample Number: DC943013 SMO #: :
:

: Sample Media (circle one): :
: SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____ :
:

: Sample Split (circle one): YES NO :
:

: Sample Container : Tag Color : Preservative : Analysis Requested :

: CUBITAINER :	: HNO3/4 C :	: TOTAL METALS :
: CUBITAINER :	: HNO3/4 C :	: DISSOLVED METAL :
: 1 GAL. AMBER :	: 4 C :	: SULFATE :
: 1 GAL. AMBER :	: 4 C :	: CHLORIDE :

: Depth: _____ Pan #: _____ Aliquots: _____ :
:

: Samplers: Wes McCall :
: Debbie Palmer :

COMMENTS OF FIELD PERSONNEL

: Site Description: Well North side of Highway 22 :
: Linwood Quarry :
: Temp = 16°C :
: Conductivity - 900 umhos :
: pH = 7.3 :
:

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 5 Day: 27 Time: 11:25 Leader: WES MCCALL

Sample Number: DC9430/4 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

[illegible]

Depth: _____ Fan #: _____ Aliquots: _____
 Samplers: Wen McCall
Dellie Palmer

Site Description: Well sample at Linwood Quarry
office

Temp = 17
Condr = 825 μ mols
pH = 7.1

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 05 Day: 23 Time: 17:45 Leader: WES MCCALL

Sample Number: DC943015 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

CUBITAINER	HNO3/4 C	TOTAL METALS
CUBITAINER	HNO3/4 C	DISSOLVED METAL
1 GAL.AMBER	4 C	SULFATE
1 GAL.AMBER	4 C	CHLORIDE

Samplers: Win McCall
Lebbie Palmer

Site Description: Drainage water under portion of
Mine Vent area, Linwood Quarry
Cond = 600 μ mhos
Temp = 19°C?
pH = 6.65

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 5 Day: 23 Time: 14:00 Leader: WES MCCALL

Sample Number: DC9430 16 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

[illegible]

Samplers: *Det M. E. Call*

Nephie Palmer

Site Description: Discharge Pond, Linwood Quarry
 Cord = 1000 cmh
 Temp = 22°C
 pH = 9.8

```

: Site Name: UMTOWN TRUCKING      Site Number:
: Location: BUFFALO IA           Site Code:

```

Collected: YR: 89 MO: 5 Day: 23 Time: 15:00 Leader: WES MCCALL

Sample Number: DC943017 *DK LTB* SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

: Sample Container : Tag Color : Preservative : Analysis Requested :

[illegible]

Depth: _____ Fan #: _____ Aliquots: _____
 Samplers: Don McCall
Lebbie Palmer

Site Description: Above ground pumped discharge from
Linwood Quarry

Conductivity = 640 μ moles
Temp = 12.5°C
pH = ~~5.4~~ 6.76

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

: Site Name: UMTHUN TRUCKING Site Number: _____
: Location: BUFFALO IA Site Code: _____

: Collected: YR: 89 MO: 5 Day: 23 Time: 15:05 Leader: WES MCCALL
: Sample Number: DC943017 Dup SMO #: _____
: Sample Media (circle one):
: SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____
: Sample Split (circle one): YES NO

: Sample Container : Tag Color : Preservative : Analysis Requested :

: CUBITAINER	:	:	: HNO3/4 C	:	: TOTAL METALS	:
: CUBITAINER	:	:	: HNO3/4 C	:	: DISSOLVED METAL	:
: 1 GAL. AMBER	:	:	: 4 C	:	: SULFATE	:
: 1 GAL. AMBER	:	:	: 4 C	:	: CHLORIDE	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
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:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:

: Depth: _____ Pan #: _____ Aliquots: _____
: Samplers: Wes McCall
: Debbie Palmer

COMMENTS OF FIELD PERSONNEL

: Site Description: Above ground pumped discharge from
: Conductivity = 640 μ mhos Linwood Quarry
: Temp = 12.5°C
: pH = 6.74

```

: Site Name: UMTOWN TRUCKING                               Site Number:
: Location: BUFFALO IA                                     Site Code:

```

Collected: YR: 89 MO: 5 Day: 23 Time: 16:44 Leader: WES MCCALL

Sample Number: DC9430 18 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

[illegible]

Depth: _____ Fan #: _____ Aliquots: _____
 Samplers: Wen McCall
Debbie Palmer

Site Description: (b) (9)

Conductivity = 640 μ mhos

Temp = 14.5° C

pH = 6.74

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

: Site Name: UMTUN TRUCKING : Site Number: :
: Location: BUFFALO IA : Site Code: :

: Collected: YR: 89 MO: 5 Day: 23 Time: 09:05 Leader: WES MCCALL :
:

: Sample Number: DC943019 SMO #: :
:

: Sample Media (circle one): :
: SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: :
:

: Sample Split (circle one): YES NO :
:

: Sample Container : Tag Color : Preservative : Analysis Requested :
:

: CUBITAINER : : HNO3/4 C : TOTAL METALS :
:

: ~~CUBITAINER~~ : : ~~HNO3/4 C~~ : ~~DISSOLVED METAL~~ :
:

: 1 GAL. AMBER : : 4 C : SULFATE :
:

: 1 GAL. AMBER : : 4 C : CHLORIDE :
:

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:

Depth: 105' Pan #: Aliquots:

Samplers: Wes McCall

Debbie Palmer

COMMENTS OF FIELD PERSONNEL

: Site Description: City of Buffalo : Well #2 :
:

: Temp = 14.5°C :
:

: pH = 9.20 amper 6.20 :
:

: Conductivity = 900 amper :
:

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 5 Day: 23 Time: 6915 Leader: WES MCCALL

Sample Number: DC9430031 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: Ash

Sample Split (circle one): YES NO

[illegible]

Depth: 0-6" Pan #: _____ Aliquots: 5
 Samplers: G. Hays
R. Parsons

Site Description: Pile #1 50' from vent
to the South

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
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Collected: YR: 89 MO: 5 Day: 23 Time: 0930 Leader: WES MCCALL

Sample Number: DC9430032 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: Ash

Sample Split (circle one): YES NO

[illegible]

Samplers: G. Hays
R. Parsons

Site Description:

Pile # 2 150' from vent

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 5 Day: 23 Time: 0940 Leader: WES MCCALL

Sample Number: DC9430033 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSALE, SEDIMENT, WATER, OTHER: Ash

Sample Split (circle one): YES NO

[illegible]

Samplers: R. Parsons
G. Hays

Site Description:

Pile # 3 50' SE of ~~Pile # 2~~ 44

```

: Site Name: UMTOWN TRUCKING                               Site Number:
: Location: BUFFALO IA                                     Site Code:

```

Sample Number: DC9430034 SMO #: :

: Sample Split (circle one): YES (NO)

: Sample Container : Tag Color : Preservative : Analysis Requested :

```

:      8 OZ.JAR      :      :      :      :      TOTAL METALS      :
:      8 OZ.JAR      :      :      :      :      EP TOX          :
:      8 OZ.JAR      :      :      :      :      SULFIDE         :

```

Depth: 0-6" Pan #: _____ Aliquots: 5

Samplers: G. Hays
R. Parsons

: Site Description: D' 11 1 0 :

: Site Description: Pile #4 200' SE of vent
:
:

```

: Site Name: UMTOWN TRUCKING                               Site Number:
: Location: BUFFALO IA                                     Site Code:

```

Sample Number: DC94300340 SMO #:

: Sample Split (circle one): YES NO

```

: 8 OZ.JAR      :      :      : TOTAL METALS      :
: 8 OZ.JAR      :      :      : EP TOX            :
: 8 OZ.JAR      :      :      : SULFIDE           :

```

Samplers: G. Hays
R. Parsons

Site Description: 0.124 200' SE of vent

Pile #4 200' SE of vent.
Duplicate

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 64115

Collected: YR: 89 MO: 5 Day: 23 Time: 0955 Leader: WES MCCALL

Sample Number: DC9430 **035** SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES **NO**

[illegible]

Depth: 0-6' Pan #: _____ Aliquots: 5
Samplers: R. Parsons
G. Hays

Site Description: Background NW of vent.

```

: Site Name: UMTOWN TRUCKING                               Site Number:
: Location: BUFFALO IA                                     Site Code:

```

Collected: YR: 89 MO: 5 Day: 23 Time: 1020 Leader: WES MCCALL

Sample Number: DC9430035 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSALE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

: Sample Container : Tag Color : Preservative : Analysis Requested

[illegible]

Depth: 0-2" Pan #: _____ Aliquots: 4
 Samplers: G. Hays
R. Parsons

Site Description: Background on Moore Creek

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 5 Day: 23 Time: 1110 Leader: WES MCCALL

Sample Number: DC9430037 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSALE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

[illegible]

Samplers: G. Hays
R. Parsons

Site Description: Northern Well 50' North


```

: Site Name: UMTOWN TRUCKING                               Site Number:
: Location: BUFFALO IA                                     Site Code:

```

Sample Number: DC9430638 SMO #:

: Sample Split (circle one): YES **(NO)**

: Sample Container : Tag Color : Preservative : Analysis Requested :

```

:      8 OZ.JAR      :      :      :      TOTAL METALS      :
:      8 OZ.JAR      :      :      :      EP TOX          :
:      8 OZ.JAR      :      :      :      SULFIDE         :

```

Samplers: G. Hays
R. Parsons

: Site Description: *Mass. Creek bet. 2*

Moore Creek behind
Hathorn Tracking

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Number:
Site Code:

SMO #:

Sample Split (circle one): YES ☒ NO ☐

SULFIDE

Aliquots: 4

R. Parsons

Donaldson Creek (between
Ludfill & Quarry).

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: UMTHUN TRUCKING Site Number: :
Location: BUFFALO IA Site Code: :

Collected: YR: 89 MO: 5 Day: 23 Time: 08:50 Leader: WES MCCALL :
Sample Number: DC9430 ~~040~~ 040 SMO #: :
Sample Media (circle one): :
SOIL, DUST, RINSATE, SEDIMENT, WATER, OTHER: Fly-ash fine dust :
Sample Split (circle one): YES NO :

Sample Container : Tag Color : Preservative : Analysis Requested :

8 OZ.JAR	:	:	:	TOTAL METALS	:
8 OZ.JAR	:	:	:	EP TOX	:
8 OZ.JAR	:	:	:	SULFIDE	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:

Depth: 0-3" Pan #: Aliquots: 5

Samplers: Debbie Palmer
Wes McCall

COMMENTS OF FIELD PERSONNEL

Site Description: Linwood Quarry, Ash particulates
from south blower at Kilns.

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV., 25 FUNSTON RD. KANSAS CITY, KS 66115

IEM-FC

```

: Site Name: UMTOWN TRUCKING                               Site Number:
: Location: BUFFALO IA                                     Site Code:

```

Sample Number: DC943043042 SMO #:

: Sample Split (circle one): YES (NO)

: Sample Container : Tag Color : Preservative : Analysis Requested :

```
:      8 OZ.JAR      :           :          : TOTAL METALS      :  
:      8 OZ.JAR      :           :          : EP TOX            :  
:      8 OZ.JAR      :           :          : SULFIDE           :
```

Depth: 0-3" Pan #: Aliquots: 5

Samplers: Debbie Palmer
Wes McCall

Site Description: Linwood Quarry : Confluence of
Donaldson Creek with Mississippi River.

```

: Site Name: UMTOWN TRUCKING Site Number:
: Location: BUFFALO IA Site Code:

```

Sample Number: DC9430 ~~05743~~ SMO #:

: Sample Split (circle one): YES (NO)

```

:      8 OZ.JAR      :      :      :      TOTAL METALS      :
:      8 OZ.JAR      :      :      :      EP TOX          :
:      8 OZ.JAR      :      :      :      SULFIDE         :

```

Samplers: G. Saw

: Site Description: Black Island :

Background on Donaldson Creek

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Collected: YR: 89 MO: 5 Day: 23 Time: 17:05 Leader: WES MCCALL

Sample Number: DC9430 044 SMO #:

Sample Media (circle one): WM
SOIL, DUST, RINSEATE, SEDIMENT, WATER, OTHER: _____

Sample Split (circle one): YES NO

[illegible]

Nebbie Palmer

Site Description:

IBM-FC

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER:

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 07/20/89

SAMPLES

DC943001

DC943002F

DC943003

DC943004

ALUMINUM	200 U	72 J	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	33 J	200 U	89 J	50 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	170000	5000 U	77000	170000
CHROMIUM	12	10 U	28	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	13 J	25 U
IRON	410 U	100	160 U	170 U
LEAD	5.0 U	0.40 J	5.0 U	5.0 U
MAGNESIUM	45000	5000 U	31000	46000
MANGANESE	210	15 U	4.0 J	52
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	40 U	8.0 J	40 U
POTASSIUM	5500	5000 U	1700 J	7500
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	16000	5000 U	14000	15000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	25 U	18 J	160	25 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTHUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

ANALYST/ENTRY: PLC

REVIEWER: _____

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 07/20/89

SAMPLES	DC943005	DC943006	DC943007	DC943008
ALUMINUM	200 U	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	110 J	74 J	63 J	98 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	88000	150000	130000	77000
CHROMIUM	10 U	9.0 J	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	1800	520	340 U	1900
LEAD	6.1 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	34000	47000	42000	33000
MANGANESE	10 J	210	250	26
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	11 J	40 U	40 U
POTASSIUM	1600 J	4000 J	3300 J	7300
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	19000	24000	28000	48000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	800	35 U	33 U	800
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: WATER

METHOD: 9001W71

REVIEWER: _____

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 07/20/89

SAMPLES

DC943009

DC943010

DC943011

DC943012

ALUMINUM	200 U	200 U	310 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	100 J	62 J	54 J	61 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	90000	150000	110000	74000
CHROMIUM	10 U	9.0 J	28	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	20 J	25 U	25 U
IRON	190 U	100 U	500 U	120 U
LEAD	5.0 U	5.3 U	5.0 U	5.0 U
MAGNESIUM	33000	56000	19000	29000
MANGANESE	12 J	49	71	11 J
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	22 J	40 U	40 U
POTASSIUM	1800 J	3200 J	11000	3000 J
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	16000	76000	35000	35000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	510	1600	20 U	50 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: WATER

METHOD: 9001W71

REVIEWER: P. Cox

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 07/20/89

SAMPLES	DC943013	DC943014	DC943015	DC943016
ALUMINUM	200 U	200 U	200 U	490 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	24 J	43 J	40 J	34 J
BERYLLIUM	5.0 U	2.0 J	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	53000	110000	91000	240000
CHROMIUM	10 U	10 U	10 U	16
COBALT	50 U	11 J	50 U	50 U
COPPER	18 J	12 J	25 U	10 J
IRON	100 U	24000	140 U	610
LEAD	5.0 U	8.6	5.0 U	5.1 U
MAGNESIUM	19000	29000	36000	3100 J
MANGANESE	52	150	5.0 J	43
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	71	19 J	14 J
POTASSIUM	5000 J	1700 J	7900	17000
SELENIUM	25 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	180000	81000	12000	51000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	540	1100	27 U	20 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: WATER

METHOD: 9001W71

REVIEWER: P. Cox

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 07/20/89

SAMPLES	DC943017	DC943017D	DC943018	DC943019
ALUMINUM	200 U	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	79 J	81 J	48 J	120 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	80000	78000	160000	85000
CHROMIUM	10 U	16	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	11 J	25 U
IRON	130 U	190 U	1000	1900
LEAD	5.0 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	35000	35000	40000	33000
MANGANESE	5.0 J	5.0 J	28	21
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	9.0 J	16 J	13 J	40 U
POTASSIUM	2900 J	2400 J	1900 J	1600 J
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	18000	17000	20000	12000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	20 U	28 U	20 U	1500
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

MATRIX: SEDIMENT

UNITS: MG/KG

LAB: NANCO

METHOD: 9001W71

CASE: 12127

SAMPLE PREP: _____

ANALYST/ENTRY: PLC

REVIEWER: P. Cox

DATE: 07/21/89

REVIEW LEVEL: 2

DATA FILE : P56

SAMPLES	DC943031	DC943032	DC943033	DC943034
ALUMINUM	7300	6600	6600	6500
ANTIMONY	18 U	16 U	16 U	16 U
ARSENIC	5.9 J	5.0 J	4.9 J	5.0 J
BARIUM	53 J	49 J	36 J	52 J
BERYLLIUM	1.8	1.9	2.2	2.1
CADMIUM	0.60 J	0.53 J	0.81 J	1.3 U
CALCIUM	310000 J	320000 J	250000 J	300000 J
CHROMIUM	15	12	12	11
COBALT	6.6 J	4.5 J	4.0 J	3.9 J
COPPER	38 J	4.8 J	2.2 J	3.4 J
IRON	13000	15000	14000	13000
LEAD	12	10	7.4	6.1
MAGNESIUM	2400	2400	1000 J	1300 J
MANGANESE	520 J	590 J	450 J	500 J
MERCURY	0.15 U	0.13 U	0.13 U	0.13 U
NICKEL	13	15	13	14
POTASSIUM	1500 U	1800 U	2200 U	1500 U
SELENIUM	0.69 J	0.75 J	0.65 J	0.62 J
SILVER	6.0	5.1	4.3	5.2
SODIUM	1500 U	1300 U	1300 U	1300 U
THALLIUM	0.30 J	0.37 J	0.24 J	0.23 J
VANADIUM	23 U	22 U	24 U	24 U
ZINC	96	56 U	110	75 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

ANALYST/ENTRY: PLC

REVIEW LEVEL: 2

MATRIX: SEDIMENT

METHOD: 9001W71

REVIEWER: D. Cox

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 07/21/89

SAMPLES	DC943034D	DC943035	DC943036	DC943037
ALUMINUM	7700	16000	4000	10000
ANTIMONY	18 J	35 J	35 J	13 J
ARSENIC	5.4 J	9.6 J	4.1 J	5.0 J
BARIUM	57	140	160	110
BERYLLIUM	2.4	1.9	2.9	1.4
CADMIUM	0.48 J	1.2 U	0.87 J	0.45 J
CALCIUM	340000 J	5300 J	5600 J	38000 J
CHROMIUM	12	21	8.7	16
COBALT	4.3 J	11 J	28	6.8 J
COPPER	5.3 J	6.0 U	7.3 U	5.7 U
IRON	15000	23000	37000	15000
LEAD	6.3	18	6.5	14
MAGNESIUM	1400	2800	950 J	2500
MANGANESE	540 J	610 J	2200 J	790 J
MERCURY	0.12 U	0.12 U	0.14 U	0.11 U
NICKEL	14	22	64	16
POTASSIUM	1700 U	2100 U	1500 U	1900 U
SELENIUM	0.60 J	0.41 J	0.23 J	0.41 J
SILVER	5.3	2.4 U	2.9 U	2.3 U
SODIUM	1200 U	1200 U	1500 U	1100 U
THALLIUM	0.19 J	0.19 J	2.9 U	0.18 J
VANADIUM	28 U	39 U	21 U	28 U
ZINC	180	110	160	76 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: SEDIMENT

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER: P. COY

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 07/21/89

SAMPLES

DC943038

DC943039

DC943040

DC943041

ALUMINUM	12000	8500	4300	3400
ANTIMONY	23 J	25 J	12 U	14 J
ARSENIC	6.1 J	5.9 J	3.6 J	3.2 J
BARIUM	100	86	67	68
BERYLLIUM	1.1 J	1.6	0.82 J	0.80 J
CADMIUM	1.1 J	0.53 J	1.0 U	1.0 U
CALCIUM	200000 J	22000 J	310000 J	390000 J
CHROMIUM	18	16	6.8	6.8
COBALT	8.5 J	7.7 J	10 U	1.8 J
COPPER	9.2 U	6.6 U	14 J	14 J
IRON	12000	17000	7900	6900
LEAD	79	9.5	13	8.1
MAGNESIUM	7800	7000	19000	9800
MANGANESE	2000 J	730 J	430 J	420 J
MERCURY	0.18 U	0.13 U	0.10 U	0.10 U
NICKEL	22	19	77	66
POTASSIUM	4400 U	1300 U	1300 U	1000 U
SELENIUM	1.8 U	0.40 J	1.0 U	0.38 J
SILVER	5.5	2.6 U	2.9	4.0
SODIUM	280 J	1300 U	1000 U	1000 U
THALLIUM	2.1 J	2.6 U	0.18 J	2.0 U
VANADIUM	32 U	25 U	210	190
ZINC	120	69 U	43 U	68 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: SEDIMENT

METHOD: 9001W71

REVIEWER: D. COX

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 07/21/89

SAMPLES	DC943042	DC943043	DC943044
ALUMINUM	6700	4700	10000
ANTIMONY	18 U	16 U	15 J
ARSENIC	4.3 J	3.7 J	5.3 J
BARIUM	79	75	270
BERYLLIUM	1.2 J	1.1 J	1.4
CADMIUM	1.5 U	1.4 U	0.48 J
CALCIUM	160000 J	8000 J	3400 J
CHROMIUM	11	7.9	15
COBALT	3.2 J	6.0 J	11 J
COPPER	7.3 U	6.8 U	6.0 U
IRON	11000	12000	14000
LEAD	9.4	9.4	24
MAGNESIUM	6500	1500	1800
MANGANESE	420 J	420 J	2100 J
MERCURY	0.15 U	0.14 U	0.12 U
NICKEL	13	12	23
POTASSIUM	1500 U	1400 U	2300 U
SELENIUM	0.44 J	0.38 J	0.41 J
SILVER	2.9 U	2.7 U	2.4 U
SODIUM	1500 U	1400 U	1200 U
THALLIUM	2.9 U	2.7 U	0.22 J
VANADIUM	21 U	16 U	27 U
ZINC	63 U	130	110
CYANIDE	N	N	N



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO

FROM: Peggy Cox, TAT *Re*

THRU: Joseph Chandler, TATL *JCC*

DATE: July 20, 1989

SUBJECT: Review of data for UMTHUM TRUCKING

TDD# T07-8904-013

PAN# T07-Z054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 12127

CONTRACT NO.: 68-W8-0060

SITE: UMTHUM TRUCKING

REVIEWER: P. COX

LABORATORY: NANCO

METHOD NO.: 9001W71

EPA ACTIVITY: DC943

MATRIX: WATER

SMO SAMPLE NOS.

MGF169	MGE207
MGF170	MGE208
MGF171	MGE209
MGF172	MGE210
MGE201	MGE211
MGE202	MGE212
MGE203	MGE213
MGE204	MGE214
MGE205	MGE215
MGE206	MGE216

EPA SAMPLE NOS.

DC943001	DC943011
DC943002F	DC943012
DC943003	DC943013
DC943004	DC943014
DC943005	DC943015
DC943006	DC943016
DC943007	DC943017
DC943008	DC943017D
DC943009	DC943018
DC943010	DC943019

GENERAL

Case 12127 contained 20 water samples analyzed for total metals at the low level concentration. ~~Arsenic (As)~~, lead (Pb), selenium (Se), and thallium (Tl) were analyzed by graphite furnace atomic absorption (GFAA) spectroscopy and mercury (Hg) by cold vapor (CV). Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

Technical holding times and required preservation were met on all samples, with the exception of mercury (Hg) preparation/analysis holding times which were exceeded by 6 days. All data was qualified by the holding time/preservation rules.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Arsenic (As), vanadium (V), and zinc (Zn) were reported in the continuing calibration blanks and aluminum (Al) and lead (Pb) in the preparation blank. Field blank DC943002F (MGF170) was analyzed with aluminum (Al), iron (Fe), lead (Pb), and zinc (Zn) reported. Associated analyte data was qualified by the blank rules.

ICP INTERFERENCE CHECK

All analytes contained in the ICP interference check sample were within quality control limit requirements except antimony (Sb) and potassium (K) which were detected but not an elements in the EPA ICS solution. Antimony was reported at levels less than the instrument detection limit (IDL) and potassium at levels greater than the instrument detection limit (IDL). All data was qualified for potassium (K) by the ICP interference check.

LABORATORY CONTROL SAMPLE

All laboratory control samples analyzed met quality control limit requirements.

DUPLICATES

All analytes were within quality control limit requirements.

SPIKES

All analytes were within limit requirements for percent recovery except antimony (Sb), selenium (Se), and thallium (Tl). All data was qualified by the spike recovery rules.

GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA)

All parameters requiring GFAA analysis met contractual requirements. Various samples for arsenic (As), selenium (Se), and thallium (Tl) were qualified due to post digestion spike recoveries being outside quality control limits.

ICP SERIAL DILUTION

Aluminum (Al), iron (Fe), potassium (K), and zinc (Zn) were exceptions to the ICP rule for percent difference since the original sample concentration was less than 50 times the instrument detection limit (IDL). No data was qualified by the ICP serial dilution rules.

PERFORMANCE EVALUTATION SAMPLE

No performance evaluation sample was submitted to the laboratory for analysis.



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO

FROM: Peggy Cox, TAT *Re*

THRU: Joseph Chandler, TATL *JCC*

DATE: July 21, 1989

SUBJECT: Review of data for UMTHUM TRUCKING
TDD# T07-8904-013
PAN# T07-2054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 12127
CONTRACT NO.: 68-W8-0060
SITE: UMTHUM TRUCKING
REVIEWER: P. COX

LABORATORY: NANCO
METHOD NO.: 9001W71
EPA ACTIVITY: DC943
MATRIX: WATER/ASH/SOIL

SMO SAMPLE NOS.

MGE217	MGE225
MGE218	MGE226
MGE219	MGE227
MGE220	MGE228
MGE221	MGE229
MGE222	MGE230
MGE223	MGE231
MGE224	MGE232

EPA SAMPLE NOS.

DC943900P	DC943037
DC943031	DC943038
DC943032	DC943039
DC943033	DC943040
DC943034	DC943041
DC943034D	DC943042
DC943035	DC943043
DC943036	DC943044

GENERAL

Case 12127 contained 16 water/ash/soil samples analyzed for total metals at the low level concentration. Arsenic (As), lead (Pb), selenium (Se), and thallium (Tl) were analyzed by graphite furnace atomic absorption (GFAA) spectroscopy and mercury (Hg) by cold vapor (CV). Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

No technical holding times or required preservation are specified for soil samples.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Arsenic (As) was reported in the water matrix initial calibration blank and aluminum (Al), iron (Fe), potassium (K), vanadium (V), and zinc (Zn) in the continuing calibration blanks. Chromium (Cr) was reported in the water matrix preparation blank. Associated analyte data was qualified by the blank rules.

ICP INTERFERENCE CHECK

All analytes contained in the ICP interference check sample were within quality control limit requirements except antimony (Sb) and potassium (K) which were detected but not an elements in the EPA ICS solution. Antimony was reported at levels greater than the instrument detection limit (IDL) and potassium at levels less than the instrument detection limit (IDL). All data was qualified for antimony (Sb) by the ICP interference check.

LABORATORY CONTROL SAMPLE

All laboratory control samples analyzed met quality control limit requirements.

DUPLICATES

All analytes were within quality control limit requirements except calcium in the soil matrix sample. All soil matrix samples were qualified by the duplicate rules.

SPIKES

All analytes were within limit requirements for percent recovery except antimony (Sb), arsenic (As), copper (Cu), manganese (Mn), selenium (Se), and thallium (Tl) in the soil matrix sample and lead (Pb) and silver (Ag) in the water matrix sample. Associated sample data was qualified by the spike recovery rules.

GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA)

All parameters requiring GFAA analysis met contractual requirements. Various samples for selenium (Se) and thallium (Tl) were qualified due to post digestion spike recoveries being outside quality control limits.

ICP SERIAL DILUTION

Barium (Ba), beryllium (Be), calcium (Ca), magnesium (Mg), and vanadium (V) in the soil matrix sample and cadmium (Cd) and nickel (Ni) in the water matrix sample were exceptions to the ICP rule for percent difference since the original sample concentration was less than 50 times the instrument detection limit (IDL). No data was qualified by the ICP serial dilution rules.

PERFORMANCE EVALUTATION SAMPLE

Performance evaluation sample DC943900P (MGE217) was analyzed with all analytes present in the audit being identified. Calcium (Ca) and sodium (Na) were also reported. No data was qualified by the performance evaluation sample.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

Date: 8/18/89

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: DC943
Site Description: Weather Trucking

FROM: Andrea Jirka *X*
Chief, Laboratory Branch, ENSV

TO: P. Culver
SPFD-WSTM

Attached is the data transmittal for the above referenced site. These data have met all quality assurance requirements unless indicated otherwise in the data package. This is a Modified Data Transmittal; these data are modified and differ from data previously transmitted. If you have any questions or comments, please contact Dee Simmons at 236-3881.

Attachment

cc: Data File
Ann Melia, E&E/FIT

MODIFIED DATA: Data were modified for the following reason(s):

resubmittal by laboratory

DATA REPORTING / QUALIFICATION CODES

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample detection limit.
- J - The associated numerical value is an estimated quantity (explanation attached).
- I - The data are invalid (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
- N - Sample not analyzed.

CODES FOR FLASH POINT DATA

- L - The sample did not ignite or "flash". This is the highest temperature at which the sample was tested. It is possible that the material may be ignitable at higher temperatures.
- K - The sample did ignite or "flash" at the lowest temperature tested. This is usually the ambient temperature at the time of the test. It is possible that the material may be ignitable at even lower temperatures.

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: SEDIMENT

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER:

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 08/17/89

SAMPLES

DC943038

DC943040

ALUMINUM	12000	4300
ANTIMONY	23 J	12 U
ARSENIC	6.1 J	3.6 J
BARIUM	100	67
BERYLLIUM	1.1 J	0.82 J
CADMIUM	1.1 J	1.0 U
CALCIUM	200000 J	310000 J
CHROMIUM	18	6.8
COBALT	8.5 J	10 U
COPPER	9.2 U	14 J
IRON	12000	7900
LEAD	79	13
MAGNESIUM	7800	19000
MANGANESE	2000 J	430 J
MERCURY	0.18 U	0.10 U
NICKEL	22	77
POTASSIUM	4400 U	1300 U
SELENIUM	4.5 J	1.4 J
SILVER	5.5	2.9
SODIUM	280 J	1000 U
THALLIUM	2.1 J	0.18 J
VANADIUM	32 U	210
ZINC	120	43 U
CYANIDE	N	N

MODIFIED DATA



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO
FROM: Peggy Cox, TAT *PC*
DATE: August 17, 1989
SUBJECT: Review of data for UMTNUM TRUCKING
TDD# T07-8904-013
PAN# T07-Z054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 12127
CONTRACT NO.: 68-W8-0060
SITE: UMTNUM TRUCKING
REVIEWER: P. COX

LABORATORY: NANCO
METHOD NO.: 9001W71
EPA ACTIVITY: DC943
MATRIX: WATER/ASH/SOIL

SMO SAMPLE NOS.

MGE217	MGE225
MGE218	MGE226
MGE219	MGE227
MGE220	MGE228
MGE221	MGE229
MGE222	MGE230
MGE223	MGE231
MGE224	MGE232

EPA SAMPLE NOS.

DC943900P	DC943037
DC943031	DC943038
DC943032	DC943039
DC943033	DC943040
DC943034	DC943041
DC943034D	DC943042
DC943035	DC943043
DC943036	DC943044

Resubmittal of data due to laboratory response to results of contract compliance screening (CCS) resulted in one change to the memo and two changes to selenium (Se) results in samples DC943038 and DC943040 on the data sheets. Corrected memo and data sheets are being submitted and are attached.

GENERAL

Case 12127 contained 16 water/ash/soil samples analyzed for total metals at the low level concentration. Arsenic (As), lead (Pb), selenium (Se), and thallium (Tl) were analyzed by graphite furnace atomic absorption (GFAA) spectroscopy and mercury (Hg) by cold vapor (CV). Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

No technical holding times or required preservation are specified for soil samples.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Arsenic (As) was reported in the water matrix initial calibration blank and aluminum (Al), iron (Fe), potassium (K), vanadium (V), and zinc (Zn) in the continuing calibration blanks. Chromium (Cr) was reported in the water matrix preparation blank. Associated analyte data was qualified by the blank rules.

ICP INTERFERENCE CHECK

All analytes contained in the ICP interference check sample were within quality control limit requirements except antimony (Sb) and potassium (K) which were detected but not an elements in the EPA ICS solution. Antimony was reported at levels greater than the instrument detection limit (IDL) and potassium at levels less than the instrument detection limit (IDL). All data was qualified for antimony (Sb) by the ICP interference check.

LABORATORY CONTROL SAMPLE

All laboratory control samples analyzed met quality control limit requirements.

DUPLICATES

All analytes were within quality control limit requirements except calcium in the soil matrix sample. All soil matrix samples were qualified by the duplicate rules.

SPIKES

All analytes were within limit requirements for percent recovery except antimony (Sb), arsenic (As), copper (Cu), manganese (Mn), selenium (Se), and thallium (Tl) in the soil matrix sample and lead (Pb) and silver (Ag) in the water matrix sample. Associated sample data was qualified by the spike recovery rules.

GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA)

All parameters requiring GFAA analysis met contractual requirements. Various samples for selenium (Se) and thallium (Tl) were qualified due to post digestion spike recoveries being outside quality control limits.

ICP SERIAL DILUTION

Barium (Ba), beryllium (Be), magnesium (Mg), and vanadium (V) in the soil matrix sample and cadmium (Cd) and nickel (Ni) in the water matrix sample were exceptions to the ICP rule for percent difference since the original sample concentration was less than 50 times the instrument detection limit (IDL). No data was qualified by the ICP serial dilution rules.

PERFORMANCE EVALUTATION SAMPLE

Performance evaluation sample DC943900P (MGE217) was analyzed with all analytes present in the audit being identified. Calcium (Ca) and sodium (Na) were also reported. No data was qualified by the performance evaluation sample.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

DATE: 8/18/89

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: DC943
Site Description: Wmthun Trucking

FROM: Andrea Jirka *AJ*
Chief, Laboratory Branch, ENSV

TO: Mike Sanderson
Chief, Superfund Branch, WSTM

ATTN: P. Culver

Attached is the data transmittal for the above referenced site. These data have met all quality assurance requirements unless indicated otherwise in the data package. This should be considered a Partial or ☒ Complete data transmittal (completes transmittal of 8/3/89). If you have any questions or comments, please contact Dee Simmons at 236-3881.
Modified Data 8/17/89

Attachments

cc: Data Files
Ann Melia, E&E/FIT

DATA REPORTING / QUALIFICATION CODES

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample detection limit.
- J - The associated numerical value is an estimated quantity (explanation attached).
- I - The data are invalid (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
- N - Sample not analyzed.

CODES FOR FLASH POINT DATA

- L - The sample did not ignite or "flash". This is the highest temperature at which the sample was tested. It is possible that the material may be ignitable at higher temperatures.
- K - The sample did ignite or "flash" at the lowest temperature tested. This is usually the ambient temperature at the time of the test. It is possible that the material may be ignitable at even lower temperatures.

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

ANALYST/ENTRY: PLC

REVIEWER: 2.60x

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 08/15/89

SAMPLES

DC943031

DC943032

DC943033

DC943034

ALUMINUM	210	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	3.0 J	2.5 J	10 U
BARIUM	130 J	130 J	43 J	120 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	1700000	2100 J	2000000	2000000
CHROMIUM	10 U	10 U	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	11 J	100 U	27 J	100 U
LEAD	5.0 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	4600 J	15000	7500	7300
MANGANESE	15 U	1200	940	1500
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	40 U	40 U	40 U
POTASSIUM	4600 J	25000	36000	23000
SELENIUM	50 U	50 U	50 U	50 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	900 J	2600 J	3300 J	2600 J
THALLIUM	10 U	1.6 J	1.1 J	0.90 J
VANADIUM	8.0 J	8.9 J	10 J	12 J
ZINC	20 U	20 U	8.8 J	6.3 J
CYANIDE	N	N	N	N

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTHUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

REVIEWER: p. cox

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 08/15/89

SAMPLES	DC943034D	DC943035	DC943036	DC943037
ALUMINUM	200 U	200 U	200 U	120 J
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	4.4 J	10 U	10 U	100 U
BARIUM	160 J	240	440	760
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	2000000	53000	150000	1200000
CHROMIUM	10 U	10 U	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	100 U	18 J	120	100 U
LEAD	5.0 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	7100	4300 J	9000	25000
MANGANESE	1500	130	8000	4300
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	40 U	40 U	40 U
POTASSIUM	23000	10000	5000 U	12000
SELENIUM	50 U	5.0 U	5.0 U	50 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	2600 J	320 J	580 J	790 J
THALLIUM	0.90 J	10 U	1.0 J	1.2 J
VANADIUM	12 J	50 U	50 U	4.1 J
ZINC	6.6 J	20 U	23	30
CYANIDE	N	N	N	N

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: WATER

METHOD: 9001W71

REVIEWER: DCOX

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 08/15/89

SAMPLES	DC943038	DC943039	DC943040	DC943041
ALUMINUM	88 J	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	260	550	220	670
BERYLLIUM	5.0 U	0.90 J	5.0 U	5.0 U
CADMIUM	5.0 U	3.4 J	5.0 U	5.0 U
CALCIUM	2000000	480000	2900000	2700000
CHROMIUM	10 U	10 U	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	14 J	29 J	100 U	100 U
LEAD	5.0 U	5.0 U	50 U	50 U
MAGNESIUM	53000	120000	140 J	5000 U
MANGANESE	13000	5900	2.4 J	15 U
MERCURY	0.20 U	0.20 U	0.20 U	0.40
NICKEL	51	44	40 U	40 U
POTASSIUM	33000	5000 U	8700	3300 J
SELENIUM	50 U	5.0 U	50 U	50 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	2800 J	690 J	1700 J	790 J
THALLIUM	3.9 J	1.0 J	1.4 J	10 U
VANADIUM	16 J	50 U	14 J	4.4 J
ZINC	20 U	7.4 J	20 U	20 U
CYANIDE	N	N	N	N

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

REVIEWER: D. Cox

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 08/15/89

SAMPLES

DC943042

DC943043

DC943044

ALUMINUM	200 U	200 U	200 U
ANTIMONY	60 U	27 J	60 U
ARSENIC	2.3 J	2.8 J	10 U
BARIUM	810	760	460
BERYLLIUM	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U
CALCIUM	1800000	210000	35000
CHROMIUM	10 U	10 U	10 U
COBALT	29 J	62	50 U
COPPER	25 U	25 U	25 U
IRON	37 J	420	110
LEAD	5.0 U	5.0 U	5.0 U
MAGNESIUM	18000	23000	3500 J
MANGANESE	6600	13000	1400
MERCURY	0.20 U	0.20 U	0.20 U
NICKEL	54	47	40 U
POTASSIUM	5000 U	5000 U	8700
SELENIUM	50 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U
SODIUM	1200 J	1200 J	1700 J
THALLIUM	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U
ZINC	43	48	32
CYANIDE	N	N	N

ANALYSIS TYPE: SULFATE BY ANION SCAN

TITLE: UMTNUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: ~~WATER~~

METHOD: 3001WOO

REVIEWER: P. Cox

DATA FILE : P83

UNITS: MG/L

CASE: 4740G

DATE: 08/03/89

SAMPLE NO.

RESULT

DC943001	394	
DC943002F	0.10	U
DC943003	21.8	
DC943004	334	
DC943005	20.2	
DC943006	258	
DC943007	155	
DC943008	37.3	
DC943009	37.9	
DC943010	180	
DC943011	258	
DC943012	50.0	
DC943013	181	
DC943014	135	
DC943015	142	
DC943016	374	
DC943017	69.0	
DC943017D	68.0	
DC943018	12.0	
DC943019	268	

ANALYSIS TYPE: CHLORIDE BY ANION SCAN

TITLE: UMTUM TRUCKING

MATRIX: WATER

UNITS: MG/L

LAB: SILVER VALLEY

METHOD: 3001W00

CASE: 4740G

SAMPLE PREP: _____ ANALYST/ENTRY: PLC REVIEWER: pcx

DATE: .08/03/89

REVIEW LEVEL: 2

DATA FILE : P82

SAMPLE NO.	RESULT
DC943001	33.0
DC943002F	0.10
DC943003	1.01
DC943004	40.0
DC943005	0.55
DC943006	64.8
DC943007	66.2
DC943008	2.10
DC943009	11.3
DC943010	190
DC943011	55.6
DC943012	14.0
DC943013	84.0
DC943014	61.6
DC943015	24.4
DC943016	112
DC943017	7.00
DC943017D	7.20
DC943018	1.30
DC943019	27.0

U

ANALYSIS TYPE: SULFIDE

TITLE: UMTNUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: SEDIMENT

METHOD: 3761W01

REVIEWER: D. Cox

DATA FILE : P84

UNITS: MG/KG

CASE: 4740G

DATE: 08/04/89

SAMPLE NO.	RESULT
DC943031	53.0
DC943032	21.2
DC943033	10.6
DC943034	10.6
DC943034D	21.2
DC943035	10.6
DC943036	10.6
DC943037	10.6
DC943038	21.2
DC943039	21.2
DC943040	21.2
DC943041	10.6
DC943042	10.6
DC943043	21.2
DC943044	10.6



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO

FROM: Peggy Cox, TAT *2*

THRU: Joseph Chandler, TATL *2*

DATE: August 3, 1989

SUBJECT: Review of data for UMTUM TRUCKING
TDD# T07-8904-013
PAN# T07-Z054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 4740G
CONTRACT NO.: 68-W8-0074
SITE: UMTUM TRUCKING
REVIEWER: P. COX

LABORATORY: SILVER VALLEY
METHOD NO.: 3001W00
EPA ACTIVITY: DC943
MATRIX: WATER

SMO SAMPLE NOS.

MGE328	MGE338
MGE329	MGE339
MGE330	MGE340
MGE331	MGE341
MGE332	MGE342
MGE333	MGE343
MGE334	MGE344
MGE335	MGE345
MGE336	MGE346
MGE337	MGE347

EPA SAMPLE NOS.

DC943001	DC943011
DC943022F	DC943012
DC943003	DC943013
DC943004	DC943014
DC943005	DC943015
DC943006	DC943016
DC943007	DC943017
DC943008	DC943017D
DC943009	DC943018
DC943010	DC943019

GENERAL

Special Analytical Services (SAS) case 4740G contained 20 water samples analyzed for anions chloride (Cl^-) and sulfate (SO_4^{2-}) by ion chromatography. Samples DC943003 (MGE330) and DC943005 (MGE332) had chloride and sulfate results reversed. Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

Technical holding times and required preservation were met on all samples.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Initial, continuing, and preparation blanks were analyzed with no chloride or sulfate being reported. Field blank DC943002F (MGE329) was analyzed with no anions reported.

SPIKES

All analytes were within limit requirements for percent recovery.

PERFORMANCE EVALUTATION SAMPLE

No performance evaluation sample was submitted to the laboratory for analysis.



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO

FROM: Peggy Cox, TAT *PC*

THRU: Joseph Chandler, TATL *PC*

DATE: August 4, 1989

SUBJECT: Review of data for UMTUM TRUCKING

TDD# T07-8904-013

PAN# T07-Z054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 4740G

CONTRACT NO.: 68-W8-0074

SITE: UMTUM TRUCKING

REVIEWER: P. COX

LABORATORY: SILVER VALLEY

METHOD NO.: 3761W01

EPA ACTIVITY: DC943

MATRIX: WATER

SMO SAMPLE NOS.

MGE348 MGE358
MGE349 MGE359
MGE350 MGE360
MGE351 MGE361
MGE352 MGE362
MGE353
MGE354
MGE355
MGE356
MGE357

EPA SAMPLE NOS.

DC943031 DC943040
DC943032 DC943041
DC943033 DC943042
DC943034 DC943043
DC943034D DC943044
DC943035
DC943036
DC943037
DC943038
DC943039

GENERAL

Special Analytical Services (SAS) case 4740G contained 16 soil/ash samples analyzed for sulfide by titrametric procedure. Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

No technical holding times or required preservation are specified for soil samples.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Continuing and preparation blanks were analyzed with sulfide being reported. No data was qualified by the blank rules.

SPIKES

All analytes were within limit requirements for percent recovery.

PERFORMANCE EVALUTATION SAMPLE

No performance evaluation sample was submitted to the laboratory for analysis.



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO

FROM: Peggy Cox, TAT *Re*

THRU: Joseph Chandler, TATL *(HGL for J.C.)*

DATE: August 15, 1989

SUBJECT: Review of data for UMTHUM TRUCKING
TDD# T07-8904-013
PAN# T07-2054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 4740G
CONTRACT NO.: 68-W8-0074
SITE: UMTHUM TRUCKING
REVIEWER: P. COX

LABORATORY: SILVER VALLEY
METHOD NO.: 9001W71
EPA ACTIVITY: DC943
MATRIX: SOIL

SMO SAMPLE NOS.

MGE348	MGE356
MGE349	MGE357
MGE350	MGE358
MGE351	MGE359
MGE352	MGE360
MGE353	MGE361
MGE354	MGE362
MGE355	

EPA SAMPLE NOS.

DC943031	DC943038
DC943032	DC943039
DC943033	DC943040
DC943034	DC943041
DC943034D	DC943042
DC943035	DC943043
DC943036	DC943044
DC943037	

GENERAL

Special Analytical Services (SAS) request 4740G contained 15 soil samples analyzed for EP toxicity total metals at the low level concentration. Arsenic (As), lead (Pb), selenium (Se), and thallium (Tl) were analyzed by graphite furnace atomic absorption (GFAA) spectroscopy and mercury (Hg) by cold vapor (CV). Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

No technical holding times or required preservation are specified for soil samples.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Antimony (Sb), barium (Ba), cobalt (Co), copper (Cu), and silver (Ag) were reported in the initial calibration blank and aluminum (Al), antimony (Sb), barium (Ba), calcium (Ca), copper (Cu), lead (Pb), magnesium (Mg), potassium (K), and silver (Ag) were reported in the continuing calibration blanks. Antimony (Sb) was reported in the preparation blank. Associated analyte data was qualified by the blank rules.

ICP INTERFERENCE CHECK

All analytes contained in the ICP interference check sample were within quality control limit requirements except sodium (Na) which was detected but not an element in the AB ICS solution. Sodium (Na) was reported at levels greater than the instrument detection limit (IDL). All data was qualified for sodium (Na) by the ICP interference check.

LABORATORY CONTROL SAMPLE

All laboratory control samples analyzed met quality control limit requirements.

DUPLICATES

All analytes were within quality control limit requirements.

SPIKES

All analytes were within ~~quality control~~ limit requirements for percent recovery except lead (Pb), selenium (Se) and silver (Ag). All samples were qualified by the spike recovery rules.

GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA)

All parameters requiring GFAA analysis met contractual requirements. Several samples analyzed for arsenic (As), lead (Pb), selenium (Se), and thallium (Tl) had post digestion spike recoveries outside quality control limit requirements. No data was qualified by graphite furnace atomic absorption spectroscopy.

ICP SERIAL DILUTION

Aluminum (Al) and sodium (Na) were exceptions to the ICP rule for percent difference since the original concentration was less than 50 times the instrument detection limit (IDL). No data was qualified by the ICP serial dilution.

PERFORMANCE EVALUTATION SAMPLE

No performance evaluation sample was submitted to the laboratory for analysis.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

Date:

8/29/89

MEMORANDUM

SUBJECT: Data Transmittal for Activity #:
Site Description:

DC943

Unthun Trucking

FROM:

Andrea Jirka ~~X~~
Chief, Laboratory Branch, ENSV

TO:

P. Culver

SPED-WSTM

Attached is the data transmittal for the above referenced site. These data have met all quality assurance requirements unless indicated otherwise in the data package. This is a Modified Data Transmittal; these data are modified and differ from data previously transmitted. If you have any questions or comments, please contact Dee Simmons at 236-3881.

Attachment

cc: Data File

Ann Melia, ESE/FIT

MODIFIED DATA: Data were modified for the following reason(s):

response to results of CCS resulted
in changes to previously submitted
data

DATA REPORTING / QUALIFICATION CODES

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample detection limit.
- J - The associated numerical value is an estimated quantity (explanation attached).
- I - The data are invalid (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
- N - Sample not analyzed.

CODES FOR FLASH POINT DATA

- L - The sample did not ignite or "flash". This is the highest temperature at which the sample was tested. It is possible that the material may be ignitable at higher temperatures.
- K - The sample did ignite or "flash" at the lowest temperature tested. This is usually the ambient temperature at the time of the test. It is possible that the material may be ignitable at even lower temperatures.

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

MATRIX: WATER

UNITS: UG/L

LAB: NANCO

METHOD: 9001W71

CASE: 12127

SAMPLE PREP: _____ ANALYST/ENTRY: PLC REVIEWER: _____

DATE: 08/25/89

REVIEW LEVEL: 2 DATA FILE : P55

SAMPLES	DC943001	DC943002F	DC943003	DC943004
ALUMINUM	200 U	72 J	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	33 J	200 U	89 J	50 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	170000	5000 U	77000	170000
CHROMIUM	12 J	10 U	28 J	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	13 J	25 U
IRON	410 U	100	160 U	170 U
LEAD	5.0 U	0.40 J	5.0 U	5.0 U
MAGNESIUM	45000	5000 U	31000	46000
MANGANESE	210	15 U	4.0 J	52
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	40 U	8.0 J	40 U
POTASSIUM	5500	5000 U	1700 J	7500
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	16000	5000 U	14000	15000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	25 U	18 J	160	25 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTNUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER: _____

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 08/25/89

SAMPLES	DC943005	DC943006	DC943007	DC943008
ALUMINUM	200 U	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	110 J	74 J	63 J	98 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	88000	150000	130000	77000
CHROMIUM	10 U	9.0 J	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	1800	520	340 U	1900
LEAD	6.1 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	34000	47000	42000	33000
MANGANESE	10 J	210	250	26
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	11 J	40 U	40 U
POTASSIUM	1600 J	4000 J	3300 J	7300
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	19000	24000	28000	48000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	800	35 U	33 U	800
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTHUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

REVIEWER: _____

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 08/25/89

SAMPLES	DC943009	DC943010	DC943011	DC943012
ALUMINUM	200 U	200 U	310 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	100 J	62 J	54 J	61 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	90000	150000	110000	74000
CHROMIUM	10 U	9.0 J	28 J	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	20 J	25 U	25 U
IRON	190 U	100 U	500 U	120 U
LEAD	5.0 U	5.3 U	5.0 U	5.0 U
MAGNESIUM	33000	56000	19000	29000
MANGANESE	12 J	49	71	11 J
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	22 J	40 U	40 U
POTASSIUM	1800 J	3200 J	11000	3000 J
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	16000	76000	35000	35000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	510	1600	20 U	50 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

REVIEWER: _____

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 08/25/89

SAMPLES	DC943013	DC943014	DC943015	DC943016
ALUMINUM	200 U	200 U	200 U	490 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	24 J	43 J	40 J	34 J
BERYLLIUM	5.0 U	2.0 J	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	53000	110000	91000	240000
CHROMIUM	10 U	10 U	10 U	16 J
COBALT	50 U	11 J	50 U	50 U
COPPER	18 J	12 J	25 U	10 J
IRON	100 U	24000	140 U	610
LEAD	5.0 U	8.6	5.0 U	5.1 U
MAGNESIUM	19000	29000	36000	3100 J
MANGANESE	52	150	5.0 J	43
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	71	19 J	14 J
POTASSIUM	5000 J	1700 J	7900	17000
SELENIUM	25 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	180000	81000	12000	51000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	540	1100	27 U	20 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER: _____

DATA FILE : P55

UNITS: UG/L

CASE: 12127

DATE: 08/25/89

SAMPLES	DC943017	DC943017D	DC943018	DC943019
ALUMINUM	200 U	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	79 J	81 J	48 J	120 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	80000	78000	160000	85000
CHROMIUM	10 U	16 J	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	11 J	25 U
IRON	130 U	190 U	1000	1900
LEAD	5.0 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	35000	35000	40000	33000
MANGANESE	5.0 J	5.0 J	28	21
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	9.0 J	16 J	13 J	40 U
POTASSIUM	2900 J	2400 J	1900 J	1600 J
SELENIUM	5.0 U	5.0 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	18000	17000	20000	12000
THALLIUM	10 U	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U	50 U
ZINC	20 U	28 U	20 U	1500
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: SEDIMENT

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER:

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 08/25/89

SAMPLES	DC943031	DC943032	DC943033	DC943034
ALUMINUM	7300	6600	6600	6500
ANTIMONY	18 U	16 U	16 U	16 U
ARSENIC	5.9 J	5.0 J	4.9 J	5.0 J
BARIUM	53 J	49 J	36 J	52 J
BERYLLIUM	1.8	1.9	2.2	2.1
CADMIUM	0.60 J	0.53 J	0.81 J	1.3 U
CALCIUM	310000	320000	250000	300000
CHROMIUM	15	12	12	11
COBALT	6.6 J	4.5 J	4.0 J	3.9 J
COPPER	38 J	4.8 J	2.2 J	3.4 J
IRON	13000	15000	14000	13000
LEAD	12	10	7.4	6.1
MAGNESIUM	2400	2400	1000 J	1300 J
MANGANESE	520 J	590 J	450 J	500 J
MERCURY	0.15 U	0.13 U	0.13 U	0.13 U
NICKEL	13	15	13	14
POTASSIUM	1500 U	1800 U	2200 U	1500 U
SELENIUM	0.69 J	0.75 J	0.65 J	0.62 J
SILVER	6.0	5.1	4.3	5.2
SODIUM	1500 U	1300 U	1300 U	1300 U
THALLIUM	0.30 J	0.37 J	0.24 J	0.23 J
VANADIUM	23 U	22 U	24 U	24 U
ZINC	96	56 U	110	75 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: SEDIMENT

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER: P. Cox

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 08/25/89

SAMPLES

DC943034D

DC943035

DC943036

DC943037

ALUMINUM	7700	16000	4000	10000
ANTIMONY	18 J	35 J	35 J	13 J
ARSENIC	5.4 J	9.6 J	4.1 J	5.0 J
BARIUM	57	140	160	110
BERYLLIUM	2.4	1.9	2.9	1.4
CADMIUM	0.48 J	1.2 U	0.87 J	0.45 J
CALCIUM	340000	5300	5600	38000
CHROMIUM	12	21	8.7	16
COBALT	4.3 J	11 J	28	6.8 J
COPPER	5.3 J	6.0 U	7.3 U	5.7 U
IRON	15000	23000	37000	15000
LEAD	6.3	18	6.5	14
MAGNESIUM	1400	2800	950 J	2500
MANGANESE	540 J	610 J	2200 J	790 J
MERCURY	0.12 U	0.12 U	0.14 U	0.11 U
NICKEL	14	22	64	16
POTASSIUM	1700 U	2100 U	1500 U	1900 U
SELENIUM	0.60 J	0.41 J	0.23 J	0.41 J
SILVER	5.3	2.4 U	2.9 U	2.3 U
SODIUM	1200 U	1200 U	1500 U	1100 U
THALLIUM	0.19 J	0.19 J	2.9 U	0.18 J
VANADIUM	28 U	39 U	21 U	28 U
ZINC	180	110	160	76 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

MATRIX: SEDIMENT

UNITS: MG/KG

LAB: NANCO

METHOD: 9001W71

CASE: 12127

SAMPLE PREP: _____ ANALYST/ENTRY: PLC

REVIEWER: P. Cox

DATE: 08/25/89

REVIEW LEVEL: 2

DATA FILE : P56

SAMPLES	DC943038	DC943039	DC943040	DC943041
ALUMINUM	12000	8500	4300	3400
ANTIMONY	23 J	25 J	12 U	14 J
ARSENIC	6.1 J	5.9 J	3.6 J	3.2 J
BARIUM	100	86	67	68
BERYLLIUM	1.1 J	1.6	0.82 J	0.80 J
CADMIUM	1.1 J	0.53 J	1.0 U	1.0 U
CALCIUM	200000	22000	310000	390000
CHROMIUM	18	16	6.8	6.8
COBALT	8.5 J	7.7 J	10 U	1.8 J
COPPER	9.2 U	6.6 U	14 J	14 J
IRON	12000	17000	7900	6900
LEAD	79	9.5	13	8.1
MAGNESIUM	7800	7000	19000	9800
MANGANESE	2000 J	730 J	430 J	420 J
MERCURY	0.18 U	0.13 U	0.10 U	0.10 U
NICKEL	22	19	77	66
POTASSIUM	4400 U	1300 U	1300 U	1000 U
SELENIUM	4.5 J	0.40 J	1.4 J	0.38 J
SILVER	5.5	2.6 U	2.9	4.0
SODIUM	280 J	1300 U	1000 U	1000 U
THALLIUM	2.1 J	2.6 U	0.18 J	2.0 U
VANADIUM	32 U	25 U	210	190
ZINC	120	69 U	43 U	68 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: METALS, TOTAL

TITLE: UMTUM TRUCKING

LAB: NANCO

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: SEDIMENT

METHOD: 9001W71

REVIEWER: P. Cox

DATA FILE : P56

UNITS: MG/KG

CASE: 12127

DATE: 08/25/89

SAMPLES	DC943042	DC943043	DC943044
ALUMINUM	6700	4700	10000
ANTIMONY	18 U	16 U	15 J
ARSENIC	4.3 J	3.7 J	5.3 J
BARIUM	79	75	270
BERYLLIUM	1.2 J	1.1 J	1.4
CADMIUM	1.5 U	1.4 U	0.48 J
CALCIUM	160000	8000	3400
CHROMIUM	11	7.9	15
COBALT	3.2 J	6.0 J	11 J
COPPER	7.3 U	6.8 U	6.0 U
IRON	11000	12000	14000
LEAD	9.4	9.4	24
MAGNESIUM	6500	1500	1800
MANGANESE	420 J	420 J	2100 J
MERCURY	0.15 U	0.14 U	0.12 U
NICKEL	13	12	23
POTASSIUM	1500 U	1400 U	2300 U
SELENIUM	0.44 J	0.38 J	0.41 J
SILVER	2.9 U	2.7 U	2.4 U
SODIUM	1500 U	1400 U	1200 U
THALLIUM	2.9 U	2.7 U	0.22 J
VANADIUM	21 U	16 U	27 U
ZINC	63 U	130	110
CYANIDE	N	N	N

MODIFIED DATA



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Debra Morey, Chemist, CLQA/LABO

MODIFIED DATA

FROM: Peggy Cox, TAT *PC*

DATE: August 25, 1989

SUBJECT: Review of data for UMTHUM TRUCKING

TDD# T07-8904-013

PAN# T07-Z054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 12127

CONTRACT NO.: 68-W8-0060

SITE: UMTHUM TRUCKING

REVIEWER: P. COX

LABORATORY: NANCO

METHOD NO.: 9001W71

EPA ACTIVITY: DC943

MATRIX: WATER

SMO SAMPLE NOS.

MGF169	MGE207
MGF170	MGE208
MGF171	MGE209
MGF172	MGE210
MGE201	MGE211
MGE202	MGE212
MGE203	MGE213
MGE204	MGE214
MGE205	MGE215
MGE206	MGE216

EPA SAMPLE NOS.

DC943001	DC943011
DC943002F	DC943012
DC943003	DC943013
DC943004	DC943014
DC943005	DC943015
DC943006	DC943016
DC943007	DC943017
DC943008	DC943017D
DC943009	DC943018
DC943010	DC943019

GENERAL

Case 12127 contained 20 water samples analyzed for total metals at the low level concentration. Arsenic (As), lead (Pb), selenium (Se), and thallium (Tl) were analyzed by graphite furnace atomic absorption (GFAA) spectroscopy and mercury (Hg) by cold vapor (CV). Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

Technical holding times and required preservation were met on all samples, with the exception of mercury (Hg) preparation/analysis holding times which were exceeded by 6 days. All data was qualified by the holding time/preservation rules.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Arsenic (As), vanadium (V), and zinc (Zn) were reported in the continuing calibration blanks and aluminum (Al) and lead (Pb) in the preparation blank. Field blank DC943002F (MGF170) was analyzed with aluminum (Al), iron (Fe), lead (Pb), and zinc (Zn) reported. Associated analyte data was qualified by the blank rules.

ICP INTERFERENCE CHECK

All analytes contained in the ICP interference check sample were within quality control limit requirements except antimony (Sb) and potassium (K) which were detected but not an elements in the EPA ICS solution. Antimony was reported at levels less than the instrument detection limit (IDL) and potassium at levels greater than the instrument detection limit (IDL). All data was qualified for potassium (K) by the ICP interference check.

LABORATORY CONTROL SAMPLE

All laboratory control samples analyzed met quality control limit requirements.

DUPLICATES

All analytes were within quality control limit requirements except chromium (Cr). All samples were qualified by the duplicate rules.

SPIKES

All analytes were within limit requirements for percent recovery except antimony (Sb), selenium (Se), and thallium (Tl). All data was qualified by the spike recovery rules.

GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA)

All parameters requiring GFAA analysis met contractual requirements. Various samples for arsenic (As), selenium (Se), and thallium (Tl) were qualified due to post digestion spike recoveries being outside quality control limits.

ICP SERIAL DILUTION

Aluminum (Al), iron (Fe), potassium (K), and zinc (Zn) were exceptions to the ICP rule for percent difference since the original sample concentration was less than 50 times the instrument detection limit (IDL). No data was qualified by the ICP serial dilution rules.

PERFORMANCE EVALUTATION SAMPLE

No performance evaluation sample was submitted to the laboratory for analysis.



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

MODIFIED DATA

TO: Debra Morey, Chemist, CLQA/LABO
FROM: Peggy Cox, TAT^{2c}
DATE: August 25, 1989
SUBJECT: Review of data for UMTUM TRUCKING
TDD# T07-8904-013
PAN# T07-Z054-QSH

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses," July 1, 1988 revision.

The following comments and attached data sheets are a result of Ecology & Environment Inc.'s review of the above mentioned data from the contract laboratory.

CASE NO.: 12127
CONTRACT NO.: 68-W8-0060
SITE: UMTUM TRUCKING
REVIEWER: P. COX

LABORATORY: NANCO
METHOD NO.: 9001W71
EPA ACTIVITY: DC943
MATRIX: WATER/ASH/SOIL

SMO SAMPLE NOS.

MGE217	MGE225
MGE218	MGE226
MGE219	MGE227
MGE220	MGE228
MGE221	MGE229
MGE222	MGE230
MGE223	MGE231
MGE224	MGE232

EPA SAMPLE NOS.

DC943900P	DC943037
DC943031	DC943038
DC943032	DC943039
DC943033	DC943040
DC943034	DC943041
DC943034D	DC943042
DC943035	DC943043
DC943036	DC943044

GENERAL

Case 12127 contained 16 water/ash/soil samples analyzed for total metals at the low level concentration. Arsenic (As), lead (Pb), selenium (Se), and thallium (Tl) were analyzed by graphite furnace atomic absorption (GFAA) spectroscopy and mercury (Hg) by cold vapor (CV). Data review was performed at level 2.

HOLDING TIMES and PRESERVATION

No technical holding times or required preservation are specified for soil samples.

INITIAL and CONTINUING CALIBRATION

Initial and continuing calibrations were within quality control limit requirements on all parameters.

BLANKS

Arsenic (As) was reported in the water matrix initial calibration blank and aluminum (Al), iron (Fe), potassium (K), vanadium (V), and zinc (Zn) in the continuing calibration blanks. Chromium (Cr) was reported in the water matrix preparation blank. Associated analyte data was qualified by the blank rules.

ICP INTERFERENCE CHECK

All analytes contained in the ICP interference check sample were within quality control limit requirements except antimony (Sb) and potassium (K) which were detected but not as elements in the EPA ICS solution. Antimony was reported at levels greater than the instrument detection limit (IDL) and potassium at levels less than the instrument detection limit (IDL). All data was qualified for antimony (Sb) by the ICP interference check.

LABORATORY CONTROL SAMPLE

All laboratory control samples analyzed met quality control limit requirements.

DUPLICATES

All analytes were within quality control limit requirements.

SPIKES

All analytes were within limit requirements for percent recovery except antimony (Sb), arsenic (~~As~~), copper (Cu), manganese (Mn), selenium (Se), and thallium (Tl) in the soil matrix sample and silver (Ag) in the water matrix sample. Associated sample data was qualified by the spike recovery rules.

GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA)

All parameters requiring GFAA analysis met contractual requirements. Various samples for selenium (Se) and thallium (Tl) were qualified due to post digestion spike recoveries being outside quality control limits.

ICP SERIAL DILUTION

Barium (Ba), beryllium (Be), magnesium (Mg), and vanadium (V) in the soil matrix sample and cadmium (Cd) and nickel (Ni) in the water matrix sample were exceptions to the ICP rule for percent difference since the original sample concentration was less than 50 times the instrument detection limit (IDL). No data was qualified by the ICP serial dilution rules.

PERFORMANCE EVALUTATION SAMPLE

Performance evaluation sample DC943900P (MGE217) was analyzed with all analytes present in the audit being identified. Calcium (Ca) and sodium (Na) were also reported. No data was qualified by the performance evaluation sample.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
25 FUNSTON ROAD
KANSAS CITY, KANSAS 66115

Date:

10/12/89

MEMORANDUM

SUBJECT: Data Transmittal for Activity #: DC943
Site Description: Unthun Trucking

FROM: Andrea Jirka *X*
Chief, Laboratory Branch, ENSV

TO:

P. Culver
SPFD-WSTM

Attached is the data transmittal for the above referenced site. These data have met all quality assurance requirements unless indicated otherwise in the data package. This is a Modified Data Transmittal; these data are modified and differ from data previously transmitted. If you have any questions or comments, please contact Dee Simmons at 236-3881.

Attachment

cc: Data File

Ann Molina, E&E /FIT

MODIFIED DATA: Data were modified for the following reason(s):

response to results of CCIS resulted in
changes to previously submitted data.

DATA REPORTING / QUALIFICATION CODES

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample detection limit.
- J - The associated numerical value is an estimated quantity (explanation attached).
- I - The data are invalid (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
- N - Sample not analyzed.

CODES FOR FLASH POINT DATA

- L - The sample did not ignite or "flash". This is the highest temperature at which the sample was tested. It is possible that the material may be ignitable at higher temperatures.
- K - The sample did ignite or "flash" at the lowest temperature tested. This is usually the ambient temperature at the time of the test. It is possible that the material may be ignitable at even lower temperatures.

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

ANALYST/ENTRY: PLC REVIEWER: _____

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 10/03/89

SAMPLES	DC943031	DC943032	DC943033	DC943034
ALUMINUM	210	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	3.0 J	2.5 J	10 U
BARIUM	130 J	130 J	43 J	120 J
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	350000	2100 J	440000	460000
CHROMIUM	10 U	10 U	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	11 J	100 U	27 J	100 U
LEAD	5.0 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	4600 J	15000	7500	7300
MANGANESE	15 U	1200	940	1500
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	40 U	40 U	40 U
POTASSIUM	4600 J	25000	36000	23000
SELENIUM	50 U	50 U	50 U	50 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	900 J	2600 J	3300 J	2600 J
THALLIUM	10 U	1.6 J	1.1 J	0.90 J
VANADIUM	8.0 J	8.9 J	10 J	12 J
ZINC	20 U	20 U	8.8 J	6.3 J
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

MATRIX: WATER

METHOD: 9001W71

REVIEWER: _____

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 10/03/89

SAMPLES	DC943034D	DC943035	DC943036	DC943037
ALUMINUM	200 U	200 U	200 U	120 J
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	4.4 J	10 U	10 U	100 U
BARIUM	160 J	240	440	760
BERYLLIUM	5.0 U	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U	5.0 U
CALCIUM	440000	53000	150000	260000
CHROMIUM	10 U	10 U	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	100 U	18 J	120	100 U
LEAD	5.0 U	5.0 U	5.0 U	5.0 U
MAGNESIUM	7100	4300 J	9000	25000
MANGANESE	1500	130	8000	4300
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	40 U	40 U	40 U	40 U
POTASSIUM	23000	10000	5000 U	12000
SELENIUM	50 U	5.0 U	5.0 U	50 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	2600 J	320 J	580 J	790 J
THALLIUM	0.90 J	10 U	1.0 J	1.2 J
VANADIUM	12 J	50 U	50 U	4.1 J
ZINC	6.6 J	20 U	23	30
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

LAB: SILVER VALLEY

SAMPLE PREP: _____

REVIEW LEVEL: 2

ANALYST/ENTRY: PLC

MATRIX: WATER

METHOD: 9001W71

REVIEWER: _____

DATA FILE : P07

UNITS: UG/L

CASE: 4740G

DATE: 10/03/89

SAMPLES	DC943038	DC943039	DC943040	DC943041
ALUMINUM	88 J	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	10 U
BARIUM	260	550	220	670
BERYLLIUM	5.0 U	0.90 J	5.0 U	5.0 U
CADMIUM	5.0 U	3.4 J	5.0 U	5.0 U
CALCIUM	440000	480000	670000	580000
CHROMIUM	10 U	10 U	10 U	10 U
COBALT	50 U	50 U	50 U	50 U
COPPER	25 U	25 U	25 U	25 U
IRON	14 J	29 J	100 U	100 U
LEAD	5.0 U	5.0 U	50 U	50 U
MAGNESIUM	53000	120000	140 J	5000 U
MANGANESE	13000	5900	2.4 J	15 U
MERCURY	0.20 U	0.20 U	0.20 U	0.40
NICKEL	51	44	40 U	40 U
POTASSIUM	33000	5000 U	8700	3300 J
SELENIUM	50 U	5.0 U	50 U	50 U
SILVER	10 U	10 U	10 U	10 U
SODIUM	2800 J	690 J	1700 J	790 J
THALLIUM	3.9 J	1.0 J	1.4 J	10 U
VANADIUM	16 J	50 U	14 J	4.4 J
ZINC	20 U	7.4 J	20 U	20 U
CYANIDE	N	N	N	N

MODIFIED DATA

ANALYSIS TYPE: EP TOXICITY METALS

TITLE: UMTUM TRUCKING

MATRIX: WATER

UNITS: UG/L

LAB: SILVER VALLEY

METHOD: 9001W71

CASE: 4740G

SAMPLE PREP: _____ ANALYST/ENTRY: PLC REVIEWER: o cox

DATE: 10/03/89

REVIEW LEVEL: 2

DATA FILE : P07

SAMPLES

DC943042

DC943043

DC943044

ALUMINUM	200 U	200 U	200 U
ANTIMONY	60 U	27 J	60 U
ARSENIC	2.3 J	2.8 J	10 U
BARIUM	810	760	460
BERYLLIUM	5.0 U	5.0 U	5.0 U
CADMIUM	5.0 U	5.0 U	5.0 U
CALCIUM	380000	210000	35000
CHROMIUM	10 U	10 U	10 U
COBALT	29 J	62	50 U
COPPER	25 U	25 U	25 U
IRON	37 J	420	110
LEAD	5.0 U	5.0 U	5.0 U
MAGNESIUM	18000	23000	3500 J
MANGANESE	6600	13000	1400
MERCURY	0.20 U	0.20 U	0.20 U
NICKEL	54	47	40 U
POTASSIUM	5000 U	5000 U	8700
SELENIUM	50 U	5.0 U	5.0 U
SILVER	10 U	10 U	10 U
SODIUM	1200 J	1200 J	1700 J
THALLIUM	10 U	10 U	10 U
VANADIUM	50 U	50 U	50 U
ZINC	43	48	32
CYANIDE	N	N	N

MODIFIED DATA